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**People's Republic of China
People's Liberation Army
Air Force**



Defense Intelligence Agency

P R E F A C E

This research paper is based on information compiled from 1985-1991 open source Chinese publications and from discussions with Chinese military officials while assigned as the Assistant Air Attaché in Beijing, China, between May 1987 and June 1989.

This paper is meant to provide an overview of the PLA Air Force and is incomplete in many areas. All translations are my own, so the Chinese pinyin is added liberally throughout the paper. Since the paper includes only bits and pieces of fragmentary information, it is not intended to be used as a sole source document on the subject. Historical information is included, since it helps provide the basis for understanding the PLA Air Force's organization today.

This project would not have been possible without the support of all the members of USDAO Beijing and from the numerous people who provided guidance and feedback throughout the process. I would especially like to thank [REDACTED]

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I would like to dedicate this research paper to my wife, [REDACTED] and my boys, [REDACTED] and [REDACTED] who supported me through four years of research and writing.

The views expressed in this paper are those of the author and do not necessarily represent the views of the Department of Defense, the Department of the Air Force, or the Defense Intelligence Agency.

[REDACTED]
April 1991

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RESEARCH PAPER

PEOPLE'S REPUBLIC OF CHINA

PEOPLE'S LIBERATION ARMY AIR FORCE

15 April 1991

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A B B R E V I A T I O N S

AAA	Antiaircraft Artillery
AAM	Air-to-Air Missile
ADF 	Air Defense Force
AFPRO	Air Force Plant Representative Office
Bde	Brigade
Bn	Battalion
Br	Branch
Bur	Bureau
CAAC	Civil Aviation Administration of China
CCP	Chinese Communist Party
Col	Colonel
COSTIND	Commission for Science, Technology, & Industry for National Defense
CV	Deputy Commander
Dep	Deputy
Dept	Department
Div 	Division
ECCM	Electronic Counter-Countermeasures
ECM	Electronic Countermeasures
Flt	Flight
Gen	General (3 star)
GLD	General Logistics Department

Gp	Group
GPD	General Political Department
GSD	General Staff Department
Hq —	Headquarters
HqAF	Headquarters Air Force
IFF	Identification Friend or Foe
IFR	Instrument Flight Rules
KMT	Chinese Nationalist Party (Kuomintang)
Lt Gen	Lieutenant General (2 star)
Maint	Maintenance
MAJCOM	Major Command
Maj Gen	Major General (1 star)
Mgt	Management
Mil	Military
MND	Ministry of National Defense
MRAF	Military Region Air Force
MR —	Military Region
MWR	Morale, Welfare, and Recreation
NCO	Non-commissioned Officer
Ofc	Office
OJT	On-the-job Training
PLA	People's Liberation Army

PLAAF	People's Liberation Army Air Force
Pol	Political
Q'master	Quartermaster
Regt 团	Regiment
R&D	Research and Development
RFP	Request for Proposal
SAM	Surface-to-air Missiles
Sq	Squadron
Sr Col	Senior Colonel
S&T	Science and Technology
Sta	Station
STC	Standard Telegraphic Code
USAF	U.S. Air Force
USD	U.S. Dollars
VFR	Visual Flight Rules

SECTION 1

INTRODUCTION

The People's Liberation Army Air Force (PLAAF) was established on 11 November 1949 and is under the leadership of the Military Commission of the Central Committee of the Chinese Communist Party through the General Staff Department. The PLAAF's primary missions are to defend China's land and air space and to support the ground troops, using its aviation, air defense, and airborne units. Secondary missions include assisting socialist construction, providing relief and rescue operations, and supporting artificial rainmaking.

The chain of command is organized into four levels -- Headquarters Air Force, Military Region Air Forces, Air Corps/Command Posts, and operational units. While the Military Region commander is responsible for combined operations, the Military Region Air Force commander is responsible for flight and air defense operations. The seven Military Region Air Forces are Shenyang, Beijing, Lanzhou, Nanjing, Guangzhou, Jinan, and Chengdu.

Headquarters Air Force is organized administratively into the Headquarters Department, Political Department, Logistics Department, and Aeronautical Engineering Department. The first three are based on the General Staff Department, General Political Department, and General Logistics Department, respectively. With the exception of the Aeronautical Engineering Department, which does not have a General Department equivalent, each echelon in the PLAAF chain of command basically mirrors the structure of the three General Departments.

The command staff at each level consists of the commander, political commissar, deputy commanders and deputy political commissars, the chief of staff, and the directors of the political, logistics and maintenance administrative elements. The chief of staff is the director of the Headquarters Department. These members also make up the Party Committee's Standing Committee at each headquarters. Although ranks were re-instituted in 1988, a person's status and retirement age is still tied to the person's Army equivalent position, not necessarily to the rank.

In order to perform its operational missions, the PLAAF is organized into five branches -- aviation, antiaircraft artillery, surface-to-air missiles, radar, and communications. The aviation branch, which includes fighters, ground attack aircraft, bombers, transports and reconnaissance aircraft, is the air force's main arm. The PLAAF also has airborne troops logistics units, research institutes, hospitals and sanitoriums. In addition, the PLAAF's political structure ensures Party control.

Naval Aviation consists of the headquarters at Liangxiang airfield near Beijing, plus units assigned to the three fleets. These units include aviation divisions and regiments, as well as radar, communications, logistics, and antiaircraft artillery troops. Naval Aviation has over 1,000 aircraft assigned.

SECTION 2

HISTORY OF THE PLA AIR FORCE

Although the PLAAF was not formally established until November 1949, the Chinese Communist Party (CCP) became involved in aviation as early as 1924. The concept for the PLAAF did not actually take shape, however, until the early 1940s at Yanan. Two Chinese aviation pioneers were trained in the Soviet Union and had a large impact on the PLAAF's formation. In addition, Soviet involvement at flying schools and operational units in the early 1950s were very important in influencing the PLAAF's organization. This section provides an overview of the history of the PLAAF and PLA Air Defense Force (ADF), discusses the 1979 Sino-Vietnam border conflict, and highlights the PLAAF's organization today.

THE EARLY YEARS

1924-1949

In September 1924, which was during the first Nationalist Party (Kuomintang/KMT) and CCP united period, Sun Yatsen's Guangzhou Revolutionary Government established an Aviation Bureau (hangkong ju) and a military flying school in Guangzhou. Two classes (50 people) received 12 months of training from 1924-1925. Eighteen of the people (9 KMT and 9 CCP) were sent to the Soviet Union from 1925 to March 1927 for advanced flight training. Two of the key CCP members who were sent to the Soviet Union during the early years and later helped shape the PLAAF were Chang Qiankun and Wang Bi.

Chang Qiankun (born 1904) remained in the Soviet Union until 1938, then went to Dihua (Wulumuqi) until the CCP sent him to Yanan in late 1940. Over the next several years, he served in several positions, including director of the CCP Central Committee Military Commission's Aviation Bureau and PLAAF deputy commander.*

In April 1927, Wang Bi moved from Moscow's Sun Yatsen University to the Soviet Union's Air Force Ground Support School, where he graduated in September 1929. He then served in the Soviet Air Force until September 1938. Like Chang Qiankun, he went to Dihua in 1938 before being sent to Yanan in 1940. After 1949, he served primarily in political

* According to Chinese-English dictionaries published in China, three terms -- zhongyang junshi weiyuanhui, zhongyang junwei, and junwei -- are used interchangeably to mean the Military Commission of the Central Committee of the Chinese Communist Party. Although these terms have always been used in Chinese, Western publications have translated them differently, and, consequently, certain Chinese publications printed for outside consumption have followed the Western practice. For example, Western publications originally translated them as the Military Affairs Commission (MAC), but later changed to the Central Military Commission (CMC).

commissar and aircraft maintenance positions, but finished as a PLAAF deputy commander. He died in 1977.

In January 1941, the Military Commission decided to start an Air Force Engineering School, even though the CCP had no aircraft or airfields. The school was charged with teaching basic aviation theory and aviation armament. Liu Yuti, who was the Beijing Military Region Air Force (MRAF) commander until late 1990, was one of the first 100 students. Wang Bi was the first commandant, and Chang Qiankun was the first chief instructor. On 10 March 1941, the 18th Group Army Engineering School was formally established.

In May 1944 at Yanan, the Military Commission decided to establish an Aviation Section (hangkong zu) under the 18th Group Army's General Staff Department. The Aviation Section, which was responsible for all aviation work, was abolished in October 1945. Wang Bi and Chang Qiankun were the first director and deputy director, respectively.

In September 1945, the Aviation Section sent a 30 member team from Yanan to northeast China to begin preparations for setting up an aviation school. On 1 March 1946, the Northeast Democratic United Army Aviation School was established at Tonghua, in southeast Jilin Province. In May, the school moved north to Mudanjiang, and the first class began in July with four basic trainers and a few type 99 advanced trainers. Due to KMT harassment, the school moved north again in November to the eastern shore of Xingkai lake. However, it moved back to Mudanjiang in November 1948. This school is known as the Northeast Old Aviation School (dongbei lao hangxiao). Many of the initial instructors and ground support personnel were Japanese Air Force members who remained in China after the surrender in 1945. By July 1949, the school had trained 560 people, including 126 pilots. The rest received various ground support training.

THE PLAAF'S FIRST YEARS 1949-1957

In August 1949, the Soviet Union agreed to help China establish six aviation schools and sell China 434 aircraft of all types. The school at Mudanjiang was approved as the seventh shortly thereafter. In addition, the Soviets provided advisors for each of the schools. By then, they had also collected 113 KMT aircraft, 1278 engines, 74000 bombs, and 2267 technicians, and had repaired 40 airfields.

In March 1949, the Military Commission Aviation Bureau (junwei hangkong ju) was established, with Chang Qiankun as the Director and Wang Bi as the Political Commissar. The Aviation Bureau, located at #7 Dengshikou Tongfuxia Dao in Beijing, had 64 people. Almost immediately, the Aviation Bureau took people from the Northeast Old Aviation School and organized an Aviation Section (hangkong zu) in the Huadong, Huazhong, and Huabei areas. It also set up an Aviation Office (hangkong bangongshi) in Beijing, Jinan, Nanchang, Changsha, Wuhan, and Shanghai, and an Aviation Station (hangkong zhan) in

Tianjin, Xuzhou, Qingdao, Hangzhou, Taiyuan, and Zhangjiakou. The Aviation Bureau was organized administratively into four divisions and two offices as shown in Figure 1.

- Operations and Education Division (zuozhan jiaoyu chu)
 - Aeronautical Engineering Division (hangkong gongcheng chu)
 - Civil Aviation Division (minhang chu)
 - Intelligence Office (qingbao ke)
 - Supply Office (gongying ke)

On 11 November 1949, the Military Commission abolished the Aviation Bureau and formally established the PLAAF, using the Fourth Field Army's 14th bingtuan as its basis. The first Commander was Liu Yalou, and the first Political Commissar was Xiao Hua. Chang Qiankun, who was appointed as a Deputy Commander and Director of the Training Department, and Wang Bi, who

was appointed as the Deputy Political Commissar and Director of the Aeronautical Engineering Department, were the only two people left who had studied in the Soviet Union. Initially, Headquarters Air Force (HqAF) only had three first level administrative departments -- Headquarters, Political, and Logistics. By the end of the first year, however, this had expanded to six -- Headquarters, Political, Training, Engineering, Logistics, and Cadre/Personnel. The PLAAF Party Committee was established in July 1950. The HqAF organization from November 1949 - May 1953 is shown in Figure 2.

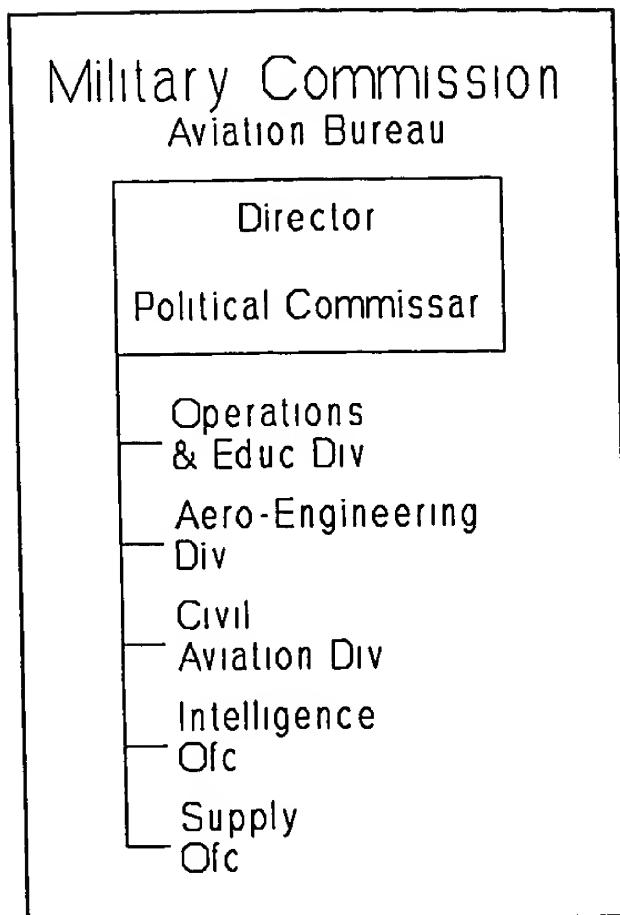


Figure 1

Headquarters Department (siling bu)

- Operations Department (zuozhan bu)
 - Reconnaissance Office (zhencha chu)
 - Communications Division (tongxin chu)
 - Air Traffic Control Division (hangxing chu)
 - Formation Division (duilie chu)
 - Confidential Division (jiyao chu)
 - Administrative Division (guanli chu)

Political Department (zhengzhi bu)

- Organization Department (zuzhi bu)
- Propaganda Department (xuanchuan bu)
- Security Department (baowei bu)
- Liaison Department (lianluo bu)
- Directly Subordinate Political Division (zhizheng chu)
- Secretariat Division (mishu chu)

Training Department (xunlian bu)

- Training Division (xunlian chu)
- Regulations Division (tiaoling chu)
- Schools Administrative Division (xuexiao guanli chu)
- Editing & Translation Division (bianyi chu)

Engineering Department (gongcheng bu)

- Aircraft Maintenance Division (jiwu chu)
- Field Maintenance Division (waichang chu)
- Procurement Division (dinghuo chu)
- Repair Division (xiuli chu)
- Equipment Division (qicai chu)
- Special Equipment Division (teshe chu)
- Armament Division (junxie chu)

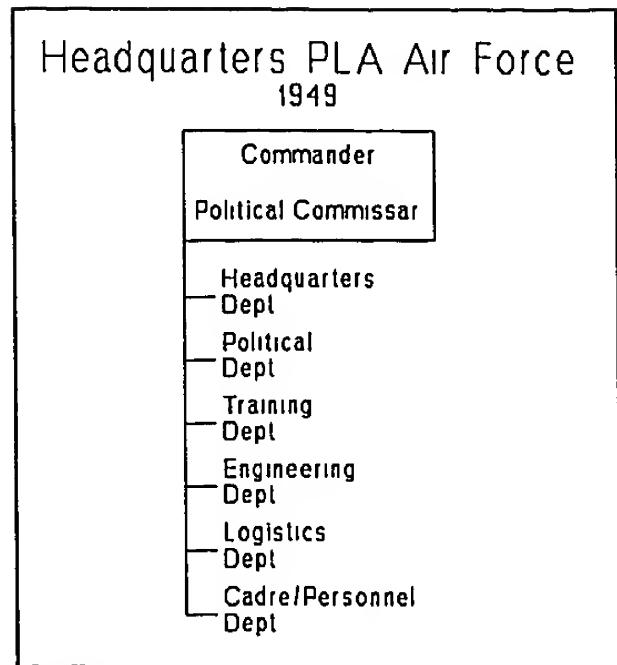


Figure 2

Logistics Department (houqin bu)

- General Office (bangong shi)
- Political Department (zhengzhi bu)
- Supply Department (gongying bu)
- Health Department (weisheng bu)
- Fuels Division (youliao chu)
- Finance Division (caiwu chu)
- Airfield Construction Division (jichang jianshe chu)
- Barracks Management Division (yingfang guanli chu)
- Transportation Division (yunshu chu)
- Armament Division (junxie chu)

Cadre/Personnel Department (ganbu bu)

- Military Cadre Division (junshi ganbu chu)
- Political Cadre Division (zhengzhi ganbu chu)
- School Cadre Division (xuexiao ganbu chu)
- Logistics Cadre Division (houqin ganbu chu)
- Secretariat Division (mishu chu)

Between August 1950 and September 1951, the Aviation Offices, which had been established under the Aviation Bureau in early 1949, expanded and became MRAF Headquarters. Administratively, each MRAF Headquarters had a Headquarters Department (siling bu), Political Department (zhengzhi bu), Logistics Department (houqin bu), Aircraft Maintenance Department (jiwu bu), and Cadre/Personnel Department (ganbu bu). In addition, a Soviet Combined Aviation Troop Group arrived in Shanghai, Nanjing, and Xuzhou in February 1950 to help with China's air defense. The Soviets began returning home in July 1951. Shown below are the names, dates, and locations of the six original Aviation Offices (Huabei/North China, Huadong/East China, Xibei/Northwest, Xinan/Southwest, Dongbei/Northeast, and Huazhong/Central China), and the names, dates, and locations of the MRAF Headquarters (junqu kongjun) once they were established.

<u>OFFICE LOCATION</u>	<u>DATE</u>	<u>LOCATION</u>	<u>MRAF HQ</u>	<u>DATE</u>	
Huabei	Apr 1949	Beijing	Huabei	Oct 1950	Beijing
Huadong	Sep 1949	Shanghai	Huadong	Aug 1950	Nanjing
Xibei	Nov 1949	Lanzhou	Xibei	Sep 1950	Lanzhou
Xinan	Jan 1950	Chongqing	Xinan	Sep 1950	Chengdu
Dongbei	Jan 1950	Shenyang	Dongbei	Aug 1950	Shenyang
Huazhong	Feb 1950	Wuhan	Zhongnan	Sep 1950	Wuhan

In May 1955, the six Military Regions (MR) were reapportioned and renamed, and the MRAFs followed suit by changing their names. Although four of the MRAFs remained in the same location, two of them moved. The Zhongnan (South Central) MRAF in Wuhan moved to Guangzhou as the Guangzhou MRAF, and the Xinan MRAF in Chengdu moved to Wuhan to become the Wuhan MRAF. The MRAF Headquarters changes are shown below:

<u>1950 MRAFs</u>	<u>1950 LOCATION</u>	<u>1955 MRAFs</u>
Dongbei (Northeast)	Shenyang	Shenyang MRAF
Huabei (North China)	Beijing	Beijing MRAF
Huadong (East China)	Nanjing	Nanjing MRAF
Zhongnan (South Central)	Wuhan	Guangzhou MRAF
Xibei (Northwest)	Lanzhou	Lanzhou MRAF
Xinan (Southwest)	Chengdu	Wuhan MRAF

In addition to realigning the MRAFs, the HqAF organization was restructured in May 1955 to include 11 first level administrative departments plus a Military Law Division. The 1955 structure is shown in Figure 3.

- Headquarters Department (siling bu)
- Political Department (zhengzhi bu)
- Cadre/Personnel Department (ganbu bu)
- Military Training Department (junshi xunlian bu)
- Military Schools Administrative Department (junshi xuexiao guanli bu)

- Engineering Department
(gongcheng bu)
- Military Procurement Department
(junshi dinghuo bu)
- Airfield Construction Department
(xuijian bu)
- Logistics Department (houqin bu)
- Finance Department (caiwu bu)
- Directly Subordinate Political Department (zhishu zhengzhi bu)
- Military Law Division (junfa chu)

The first flying squadron (zhongdui) was established in July 1949 at Beijing Nanyuan. It had three flights (two fighter and one bomber), including six P-51s, two Mosquito bombers, and two PT-19 trainers. By October, 19 more aircraft arrived and one transport flight was added.

The first aviation unit established as part of the PLAAF was designated the PLAAF 4th Combined Brigade (huncheng lu), and consisted of the 10th and 11th Fighter Regiments, the 12th Bomber Regiment, and the 13th Attack Regiment. It was established in Nanjing on 19 June 1950, and moved to Shanghai on 8 August. The brigade used the 90th Infantry Division as its base. On 28 October 1950, the 4th Combined Brigade became the PLAAF 4th Fighter Brigade, and changed again on 31 October 1950 to the PLAAF 4th Division. The four regiments were split and became the backbone of the four aviation divisions. On 30 March 1956, the 4th Division changed its name to the 1st Air Division with the 1st, 2nd, and 3rd Regiments.

In August 1950, the PLAAF established its first development plan for the years 1950 to 1953. The plan called for training 25,400 technical troops, establishing about 100 aviation regiments, repairing over 100 airfields, setting up eleven aircraft repair factories, and increasing the size of the PLAAF to 290,000. For the most part, these goals were reached by the end of 1953.

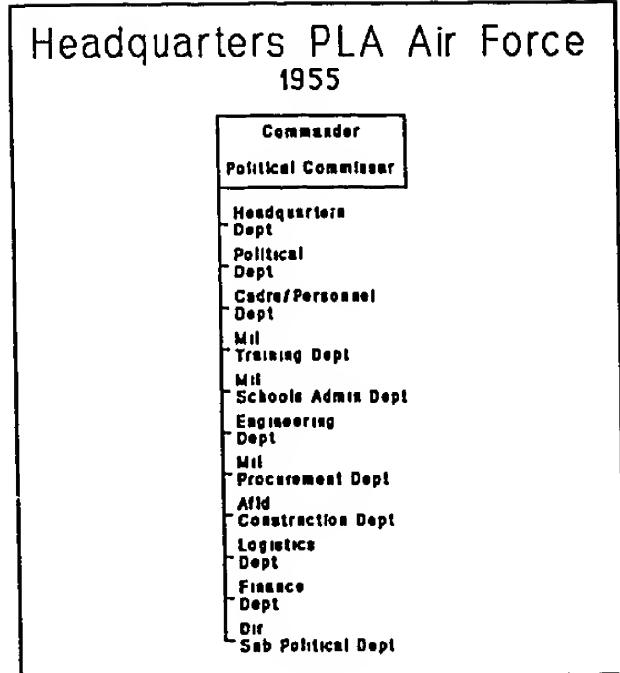


Figure 3

AIR DEFENSE FORCE HISTORY 1949 - 1957

In April 1949, in order to protect Beijing, the Huabei MR established the Ping-Jin (Beiping-Tianjin) Garrison Headquarters (weishu fangkong siling bu), with Nie Rongzhen as the Commander and Bo Yibo as the Political Commissar. On 23 April, the Nanjing Air Defense Headquarters (fangkong siling bu) was established, and in July, the Shanghai Garrison Headquarters established a Shanghai Air Defense Division (fangkong chu).

As more cities were liberated, the PLA's eight field antiaircraft artillery (AAA) regiments became responsible their air defense. The first AAA group (dadui) was formed in November 1945 in Liaoning Province. By August 1949, there were eight AAA regiments, but the PLA bought enough AAA from the Soviet Union to form ten more regiments. Later, the 6th AAA Regiment became the Air Defense School's (fangkong xuexiao) training unit, and the 8th AAA Regiment merged with the 12th Regiment. So, by the end of 1949, there were 16 AAA regiments, located in Shenyang, Anshan, Fushun, Beijing, Shanghai, Nanjing, Qishuyan, Wuhan, and Changsha.

In March 1950, the Shanghai Air Defense Headquarters (fangkong siling bu) was established. In April, the Shanghai Air Defense Command Post (fangkong zhihuisuo) was formed, with subordinate fighter, AAA, searchlight, and antiaircraft reporting (duikong qingbao) command offices (zhihuishi). Between May and September, a radar element was established, then expanded to a radar battalion. In August, a searchlight regiment was established.

Between March-May 1950, three AAA divisions were established to control the AAA regiments. The 1st AAA Division was organized in Wuhan, with its subordinate 1st, 2nd, 3rd, and 9th Regiments stationed in the Leizhou Peninsula, Guangzhou, and Wuhan. The 2nd AAA Division was formed in Shenyang, with the subordinate 4th and 5th Regiments stationed in Shenyang, Anshan, and Xiaofengman. The 3rd AAA Division was established in Shanghai, with the subordinate 11th, 14th, 17th, and 18th Regiments, all of which were stationed in Shanghai.

On 23 October 1950, the PLA Air Defense Headquarters (fangkong siling bu) was formally established with Zhou Shidi as the Commander and Zhong Chibing as the Political Commissar. At this time, there were two AAA divisions (the 2nd had changed to the Dongbei MR Air Defense Headquarters/junqu fangkong siling bu), 16 AAA regiments, one searchlight regiment, two radar battalions, and one aircraft observation battalion (duikong jianshi ying). Shortly thereafter, there were four MR Air Defense Headquarters (Huadong, Huabei, Dongbei, and Zhongnan). In addition, command organizations for the Xinan MR Air Defense Division (fangkong chu), the Andong and Xiaofengman Air Defense Headquarters, the Zhejiang and Fujian Air Defense Divisions, and the Nanjing, Tianjin, Wuhan, and Nanchang Air Defense Command Posts (fangkong zhihuisuo) were formed.

From the beginning of the Korean War in June 1950 until July 1953, the Air Defense Troops had the following units:

- 2 AAA divisions (the 101st and 102nd)
- The 1st AAA Division became the Zhongnan MR Air Defense Headquarters
- The 3rd AAA Division became a Field AAA Division
- 33 AAA regiments
- ~~- 8~~ independent AAA battalions
- 4 searchlight regiment
- 1 radar regiment
- 8 radar battalions
- 17 aircraft observation battalions

In addition, the Air Defense Force established the following schools during the early year:

- Advanced Air Defense School (gaoji fangkong xuexiao)
- AAA School (gaoshepao xuexiao)
- Air Defense School (fangkong xuexiao)
- Radar School (leida xuexiao)
- Maintenance School (jishu xuexiao)
- 3 Preparatory Schools (yubei xuexiao)

In March 1955, Yang Chengwu became Commander of the Air Defense Troops. In August 1955, the PLA Air Defense Troops (fangkong budui) became the PLA Air Defense Force (ADF/fangkongjun), and the PLA Air Defense Headquarters (fangkong siling bu) became the PLA Air Defense Force Headquarters (fangkongjun siling bu). From this point on, the ADF became a service (junzhong) equivalent to the Air Force and Navy.

When the ADF and PLAAF merged in May 1957, the ADF had the following units:

- Shenyang, Beijing, Nanjing, and Guangzhou MR Air Defense Headquarters
- 1 ADF Corps (fangkongjun diyi jun) formed in Fuzhou in September 1955
- ~~- 8~~ Schools
 - AAA troops
 - Searchlight troops
 - Aircraft reporting troops
 - 149,000 personnel

THE PLAAF AFTER MAY 1957

When the PLAAF and ADF merged, the new PLAAF leadership incorporated members of both forces as follows:

- Commander	Liu Yalou	(PLAAF)	0491/0068/2869
- Political Commissar	Wu Faxian	(PLAAF)	0702/3127/2009
- Deputy Commanders	Wang Bingzhang	(PLAAF)	3769/4426/3864
	Liu Zhen	(PLAAF)	0491/7201
	Cheng Jun	(ADF)	2052/6874
	Cao Lihuai	(PLAAF)	2580/6849/2037
	Tan Jiashu	(ADF)	6223/1367/6615
	Chang Qiankun	(PLAAF)	1603/0051/0981
	Xu Shenji	(PLAAF)	1776/3234/0679

Based on the initial decision to have the PLAAF and ADF merge, the following organizational changes took place:

- The ADF's command organization AAA troops, searchlight troops, and aircraft reporting troops were kept intact
- The PLAAF's radar flights (fendui) and the ADF's aircraft reporting troops were merged
- Administrative elements with similar duties were combined
- Air Defense Command Posts (fangkong zhihuisuo) at each PLAAF and ADF level were merged into a unified Air Defense Operations Command Post (fangkong zuozhan zhihuisuo)
- All of the ADF's schools were kept intact

Following the merger and the addition of the surface-to-air missile (SAM) Troops in 1958, the PLAAF consisted of the following branches (bingzhong):

- The PLAAF's Aviation Troops (hangkong bing) included fighters, bombers, reconnaissance aircraft, transports and each type of specialized aviation troop units. From the end of the Korean War to 1957, some of the existing air divisions expanded from two to three regiments. From 1960-1965, more air divisions were created to guard the coast. From 1966-1976, aviation troop units were expanded to cover the rest of China.

- At the time of the PLAAF-ADF merger, the ADF's AAA Troops (gaoshepao bing) already had 11 AAA divisions. In 1958, one of the AAA division's headquarters changed to a SAM training base. From 1959 to 1975, the number of AAA units expanded; however, there was a fairly large reduction in 1975.

- The PLAAF's SAM Troops (dikong daodan bing) began when China received its first SA-2 missiles (five launchers and 62 missiles) from the Soviet Union in October 1958. The first batch of SAMs was organized into three battalions, consisting of people borrowed from the AAA, radar, aviation maintenance, and searchlight troops. The first SAM division was formed on 1 April 1964 as the 4th Independent AAA Division. In September 1958, a Special Weapons School (tezhong wuqi xuexiao) was organized in Baoding and called the 15th Aviation School (hangkong xuexiao). It was responsible for training all services on surface-to-surface, surface-to-air, and shore-to-ship missile maintenance. In 1963, however, this school became responsible only for training SAM commanders, maintenance, and construction.

- After the 1957 merger, the ADF's Aircraft Reporting Troops (duikong qingbao bing) changed their name to PLAAF Radar Troops (kongjun leida bing), and became a PLAAF branch. The PLAAF's original radar flights (leida fendui) became subordinate to the radar regiments.

- After the merger, the ADF's Searchlight Troops (tanzhao deng bing) also became a PLAAF branch, with six regiments to support aviation and AAA troop night operations. In April 1974, the Searchlight Troops were abolished.

- On 26 July 1950, the PLAAF's Airborne Troops (kongjiang bing) began when the Military Commission established the PLAAF 1st Marine Brigade (luzhan diyi lu) was established in Shanghai, using the Third Field Army's 9th bingtuan's 30th Corps' (jun) 89th Division as a basis. On 1 August, the brigade's Headquarters moved to Kaifeng, Henan Province, while Kaifeng and Zhengzhou, Henan Province, were designated as the brigade's training bases. This brigade eventually became an airborne division (kongjiang bing shi). Thereafter, the unit's designation changed several times, becoming the Air Force Marine First Division, the Paratroops Division (sanbing shi), then the Airborne Division (kongjiang bing shi). In May 1961, the Military Commission changed the Army's 15th Army (15 jun), which had fought during the Korean War, into the PLAAF 15th Airborne Army (kongjun kongjiang bing di 15 jun), and subordinated the PLAAF's original airborne division to this new Army. Today, it is known as the PLAAF 15th Airborne Army (kong 15 jun). In October 1964, an aviation transport regiment was created to support the airborne troops. In December 1969, the first helicopter regiment was assigned to the airborne troops, and the number of personnel and equipment increased. In 1975, the airborne troops underwent a reduction in force, yet new types of weapons were introduced.

The May 1955 HqAF reorganization which provided for 11 first level administrative departments reflected the needs of the three general departments (san zongbu) -- General Staff Department (GSD), General Political Department (GPD) and General Logistics Department (GLD). When the PLAAF and ADF merged, the AAA Command Department (gaoshepao bing zihui bu), the Radar Department (leida bing bu), and the Searchlight Department (tanzhao deng bing bu) were added. In June 1957, the Finance Department (caiwu bu) was incorporated into the Logistics Department, and in September 1957, the Headquarters Department's Communications Division (tongxin chu) became a first level Communications Department (tongxin bu).

From 1958-1965, two HqAF first level departments were added and five more merged into other departments as follows:

- The Military Scientific Research Department (junshi kexue yanjiu bu/keyan bu) was added
- The Technical Department (jishu bu) was added and became responsible for SAMs, but this department was later merged with the AAA Command Department. In June 1966, they again split, and the Second AAA Command Department (dier gaoshepao bing zihui bu) was established.
- The Military Procurement Department merged into the Engineering Department
- The Airfield Construction Department merged into the Logistics Department
- The Searchlight Department merged into the AAA Command Department
- The Cadre/Personnel Department merged into the Political Department
- The Communications Department merged into the Headquarters Department

As a result of these changes, HqAF had 11 first level administrative departments from 1966-1969 as shown in Figure 4.

- Headquarters Department (siling bu)
- Political Department (zhengzhi bu)
- Logistics Department (houqin bu)
- Engineering Department (gongcheng bu)
- Training Department (junxun bu)

- Schools Department (junxiao bu)
- Scientific Research Department (keyan bu)
- AAA Command Department (gaoshepao bing zihui bu)
- 2nd AAA Command Department (dier gaoshepao bing zihui bu)
- Radar Department (leida bing bu)
- Directly Subordinate Political Department (zhishu zhengzhi bu)

In 1969, the PLA carried out a reduction in force, and on 25 September HqAF was reduced to three first level departments (3 da bu) as shown in Figure 5.

- Headquarters Department (siling bu)
- Political Department (zhengzhi bu)
- Logistics Department (houqin bu)

In addition to reducing the number of first level departments, the following departments were changed:

- The Training and Schools Departments were merged into the Training Department
- The AAA Command Department, 2nd AAA Command Department, Radar Department, and Scientific Research Department were reduced in size and became subordinate to the Headquarters Department

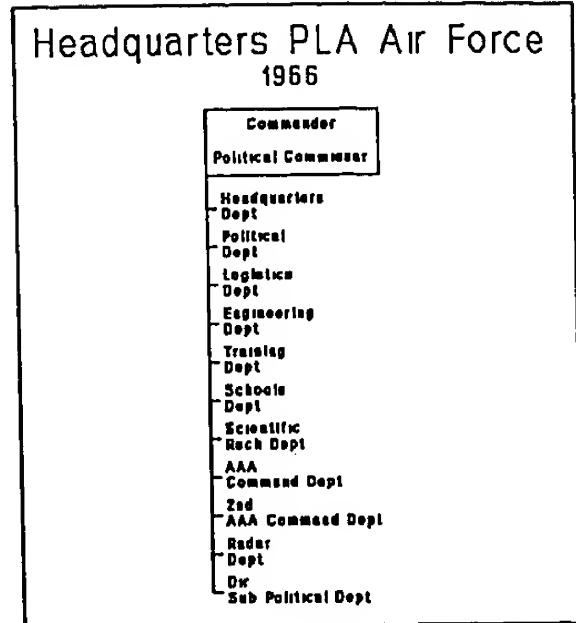


Figure 4

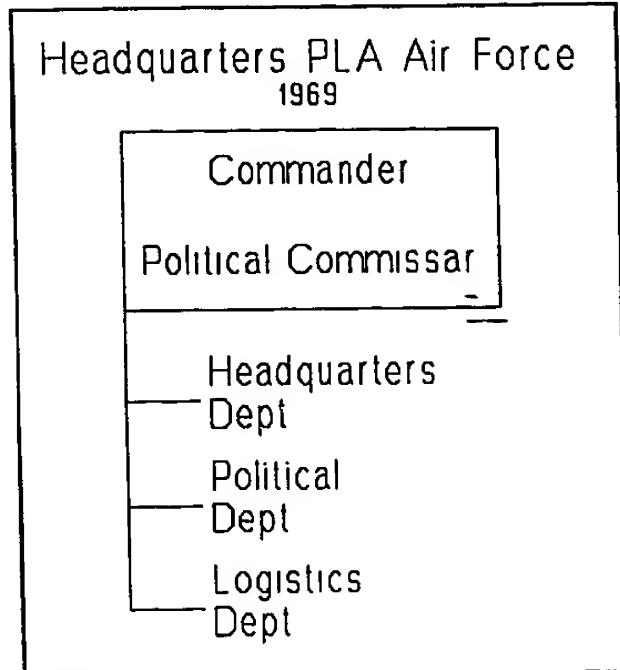


Figure 5

- The Engineering and Directly Subordinate Political Departments were abolished
- The Engineering Department's administrative and field maintenance work became the Headquarters Department's responsibility
- The Engineering Department's repair and procurement work became the Logistic's Department's responsibility

When the Engineering Department was abolished, this created big problems for maintenance support, so the Engineering Department was reactivated as the Aeronautical Engineering Department (hangkong gongcheng bu) in May 1976 as the fourth first level administrative department (Figure 6). This structure of four first level department remains in effect today. Sections 10, 11, and 12 show the numerous organizational changes that also took place within the Military Regions between 1958 and 1985.

1979 SINO-VIETNAM BORDER CONFLICT

Following the disruption of the Cultural Revolution, the PLAAF consistently cites the Third Plenum of the 11th Party Congress in 1978 as the beginning of its current phase of regularization (zhengguihua) and modernization (xiandaihua). However, the PLAAF was not prepared mentally or operationally for the 17 February to 16 March 1979 border conflict with Vietnam, which China called a self-defense operation. The PLAAF began its preparations in the Guangxi Autonomous Region about 45 days prior to the first day of operations.

The Guangzhou MRAF Headquarters established a Forward Command Post (qianzhi) which worked together with the 7th Air Corps at Nanning as the unified authority for the PLAAF's participation in the conflict. The PLAAF identified as one of its first missions the need to educate the troops in Guangxi about the reasons for the upcoming operations, and the need to motivate them to work all out preparing for the influx of troops. Upon receiving the combat readiness alert, all of the troops in the region received intensive education by studying the Military Commission's and HqAF's orders and relevant newspaper articles. In addition, three simple principles were put forth -- everything is subordinate to war; resolutely carry out orders; and hard work comes first.

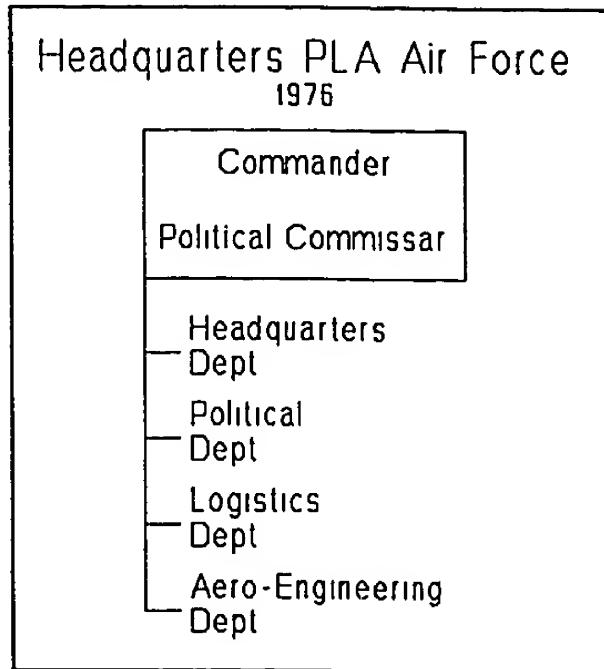


Figure 6

One of the most important tasks during this period was to prepare the airfields in Guangxi for the influx of over 20,000 PLAAF aviation, SAM, and AAA troops. The Guangzhou MRAF's Logistics Department was responsible for organizing the housing, material, transportation, and fuel support for these troops and their equipment, as well as the helicopter rescue and transport support for wounded soldiers at the front line. The airfields also took this opportunity to build, repair, and/or acquire new equipment or facilities which they had not been able to do previously.

According to the PLA, "the Vietnamese Air Force did not dare start anything during the border conflict, which the Chinese limited to a certain area, time frame, and goals, because the PLAAF was able to maintain air superiority." Therefore, the PLAAF restricted its missions to fighter reconnaissance and early warning missions along the border, helicopter rescue missions to pick up wounded soldiers, and air transport missions. Since there was no air war, the PLAAF did not use any ground attack aircraft or bombers. As a result, only about one-fourth of the fuel estimated for combat was used, and the difficulties with fuel consumption were fewer than expected, but several organizational and facilities problems were highlighted (See Section 18 for further details).

THE PLA AIR FORCE TODAY

Today, the PLAAF is under the leadership of the Military Commission through the General Staff Department (Figure 7). As a service arm, the Air Force's position in the chain of command is slightly higher than that of the seven military regions. The PLAAF's primary missions are to defend China's land and air space and to support the ground forces, using its aviation, air defense, and airborne units. Secondary missions include assisting socialist construction, providing relief and rescue operations, and supporting artificial rainmaking.

The seven Military Region commanders are responsible for combined operations, while the MRAF commanders are responsible for

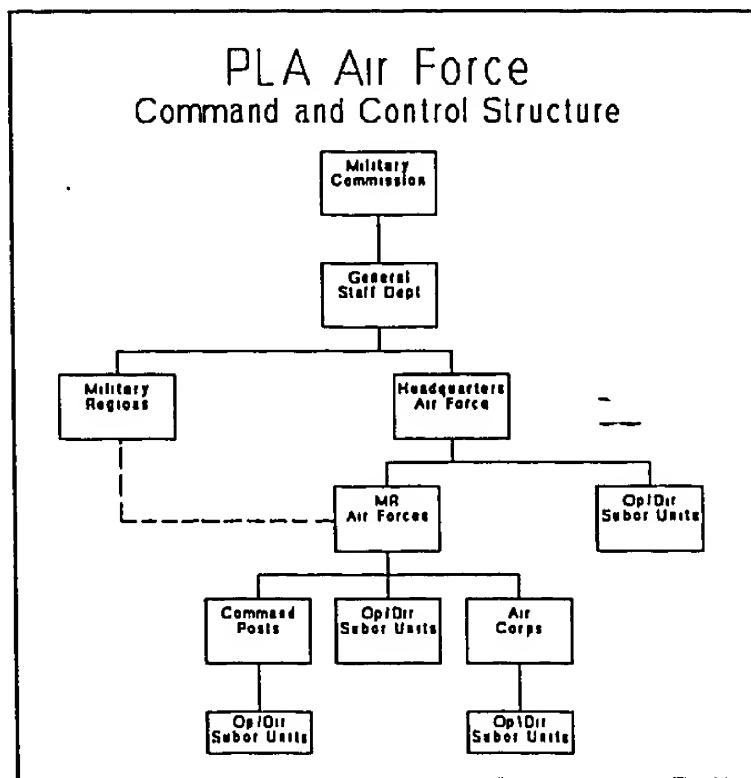


Figure 7

flight and air defense operations. Since 1988, each MRAF commander has also become a Military Region deputy commander. The seven MRAF's are organized in the following protocol order -- Shenyang, Beijing, Lanzhou, Nanjing, Guangzhou, Jinan, and Chengdu.

In order to perform its operational missions, the PLAAF, which is one of the PLA's three services (junzhong) along with the Navy and Second Artillery (strategic rocket forces), is organized into five branches (bingzhong) -- aviation (hangkong bing), AAA (gaoshepao bing), SAM (dikong daodan bing), radar (leida bing), and communications (tongxin bing). The aviation branch, which includes fighters, ground attack aircraft, bombers, transports, and reconnaissance aircraft, is the PLAAF's main arm. The Air Force also has Airborne Troops (kongjiang bing) and logistics units (houqin budui), as well as directly subordinate units (zhishu budui), such as procuratorates (jiancha yuan), research institutes (yanjiusuo), hospitals (yiyuan), and academies/ schools (xueyuan/xuexiao). In addition, it has an integrated political structure at every level to ensure Party control of the military.

The primary missions of the PLAAF's Aviation Troops five main components are shown below:

Fighter Aviation Troops (qianji hangkong bing)

- Resist enemy air attacks, and protect the safety of important national targets
- Carry out air superiority
- Protect important Army and Naval deployments and important group army combat maneuvers, cut off encircling enemy troops from the air, impede the enemy from conducting aerial maneuvers and aerial logistics support
- Support the combat actions of other aviation troop units and airborne troops
- Destroy the enemy's airborne troops

Bomber Aviation Troops (hongzha hangkong bing)

- Destroy enemy missiles, nuclear weapons, and missile bases (launch sites), associated warehouses, and production bases
- Attack important enemy deployment areas. Destroy and suppress enemy tanks and artillery, command structure, defense works, and important military warehouses

- Support the struggle for air superiority. Destroy and suppress enemy airfields, aircraft, and personnel
- Destroy and suppress enemy combat ships, transport vessels, amphibious landing craft, and naval bases and ports

~~-~~Impede enemy transportation. Destroy rail hubs, roads, bridges, crossing points, wharves, fuel lines, and transportation equipment

- Destroy important enemy rear area targets
- Support airborne force movements, and destroy enemy airborne forces
- Conduct aerial minelaying and anti-submarine warfare
- Conduct aerial reconnaissance and electronic countermeasures

Ground Attack Aviation Troops (qiangji hangkong bing)

- Directly support ground force operations. Destroy enemy missiles, nuclear weapons, tanks, artillery emplacements, command structure, defense works, and transportation
- Support amphibious landing forces, and destroy enemy amphibious forces
- Support airborne forces, and destroy enemy airborne forces
- Join air superiority battles. Destroy enemy front line airfields and radar sites, and conduct aerial reconnaissance

Reconnaissance Aviation Troops (zhencha hangkong bing)

- Support anti-attack and air superiority combat. Clarify enemy aviation deployments, missiles and nuclear weapons deployment sites, as well as air force and naval bases and aircraft carrier positions
- Reconnoiter enemy headquarters facilities, military sites, industries, and transportation
- Conduct electron reconnaissance, as well as clarify the enemy's electronic equipment capabilities and locations
- Inspect the friendly force camouflage situation and effective measures against a surprise enemy attack

Transportation Aviation Troops (yunshu hangkong bing)

- Support ground forces from the air, and help move other PLAAF units between airfields
- Transport airborne troops to conduct combat
- Transport troops and cargo, and aerial drop weapons, material, and materiel
- Conduct air rescue, communications, reconnaissance, and political propaganda
- Support troops, guerrillas, and militia conducting operations behind enemy lines
- Conduct Party and political work, including cargo and aerial drops to help the masses during natural disasters

COMMAND STAFF

Within the PLAAF, the chain of command is organized into four levels -- HqAF, MRAF Headquarters, Air Corps/Command Posts, and operational units. The command staff at each level consists of the following personnel:

- Commander
- Political commissar
- Deputy commander(s)
- Deputy political commissar(s)
- Chief of staff (Director, Headquarters Department)
- Director, political element
- Director, logistics element
- Director, maintenance element

ADMINISTRATIVE STRUCTURE

The administrative organization (xingzheng jigou/tizhi) at the HqAF, MRAF, and Air Corps levels includes the four big/first level departments (4 da bu/yiji bu), plus their second level departments/bureaus (erji bu). Within the Command Posts, the Headquarters Department is the only first level department. The collective elements within any one of the administrative organizations are collectively referred to as bumen, such as the Logistics Department as a whole is known as the houqin bumen (See Figure 8). Altogether, administrative elements within the various headquarters include departments (bu), bureaus (ju), divisions (chu), offices (shi/ke), sections (zu), and branches (gu). The four big/first level departments at HqAF are the same as those in 1976 (Figure 6). These are sometimes referred to as the military (junshi), political (zhengzhi), logistics (houqin), and aeronautical engineering (hangkong gongcheng) elements (jiguan) or departments (bumen).

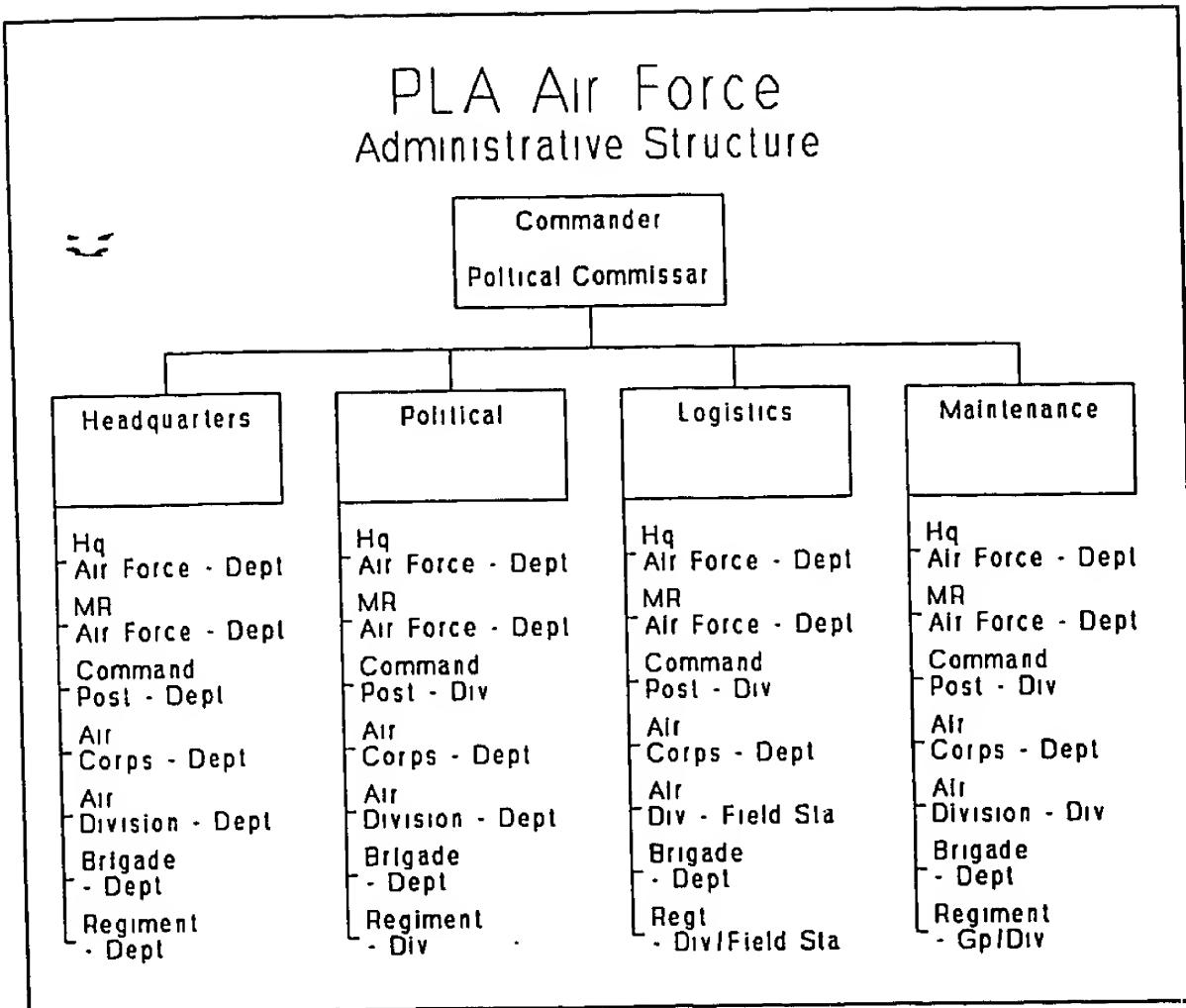


Figure 8

For the most part, each of the four first level departments are represented throughout the lower echelons in the chain of command from the three general departments (GSD, GPD, GLD) to the lowest PLAAF echelon. The one exception is in the area of maintenance, whereby the Aeronautical Engineering Department is responsible for aircraft maintenance, but the Logistics Department is responsible for all non-aviation maintenance. Figure 9 shows the first level organization for the three general departments, three services (Navy, Air Force, and Second Artillery), and Military Regions.

ARMY-EQUIVALENT POSITIONS

All personnel within the PLAAF, regardless of whether they are in a non-operational administrative/staff element/unit (danwei) or an operational unit (budui), have an Army-equivalent position (zhiwu dengji) at the Military Region (MR/da junqu), army (jun), division

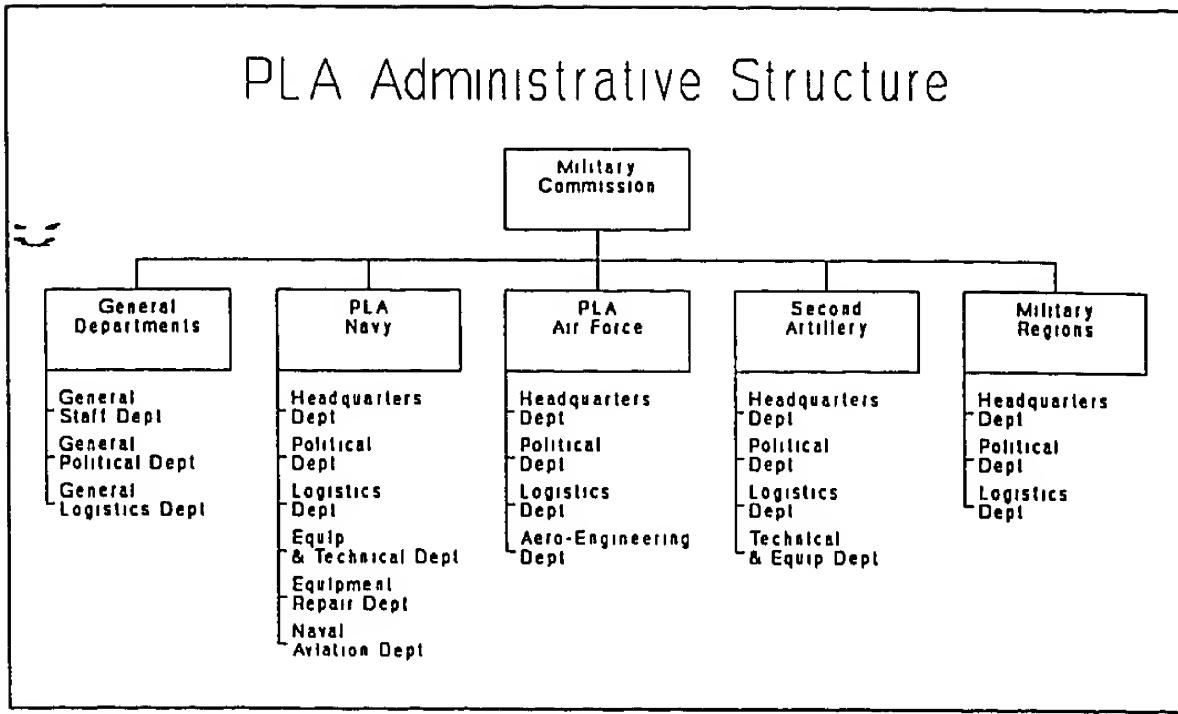


Figure 9

(shi), regiment (tuan), battalion (ying), company (lian), or squad (ban) level. For example, a pilot cadet graduates from a flying academy at the Army-equivalent position of a deputy company commander (fulian zhi). Non-operational administrative elements/units include all personnel within the various headquarters, such as HqAF, MRAF Headquarters, Command Posts, and Air Corps, as well as directly subordinate units such as research institutes. In 1988, the PLAAF had approximately 1125 regiment and above administrative/staff units (danwei).

Even though ranks were re-instituted in 1988, a person's rank is still not as important as the Army-equivalent position that person holds. Although the PLAAF commander and political commissar can make recommendations for assignments, the Military Commission makes the final decision on all personnel appointments above the Air Corps (jun) level.

As of 1988, people who do not progress past a particular Army-equivalent position must retire at the following ages:

<u>Army Equivalent Position</u>	<u>Retirement Age</u>
Military Region (da junqu) commander	65
Army (jun) commander	60
Division (shi) commander	55
Regiment (tuan) commander	45
Battalion (ying) commander	40
Company (lian) commander	35
Platoon (pai) commander	30

At HqAF, the senior positions range from a Military Region commander to an Army commander equivalent position. In the late 1980s, the Director of the Logistics Department was changed from an Army commander equivalent to a Military Region deputy commander equivalent. At HqAF, the directors of all of the second level departments within the four first level departments are equivalent to division (shi) commanders. The HqAF-Army position equivalents are shown below:

<u>HqAF Position</u>	<u>Army-Equivalent Position</u>
Commander	MR Commander
Political Commissar	MR Commander
Deputy Commander	MR Deputy Commander
Deputy Political Commissar	MR Deputy Commander
Chief of Staff	MR Deputy Commander
Deputy Chief of Staff	Army Commander
Director, Political Dept	MR Deputy Commander
Director, Logistics Dept	MR Deputy Commander
Director, Aero-Engineer Dept	Army Commander

The MRAF-Army position equivalents are shown below. Prior to the August 1985 Military Region reorganization, MRAF Headquarters were at the same level as a bingtuan. However, the 1985 reorganization abolished the bingtuan level.

<u>MRAF Hq Position</u>	<u>Army-Equivalent Position</u>
Commander	MR Deputy Commander
Political Commissar	MR Deputy Commander
Deputy Commander	Army Commander
Deputy Political Commissar	Army Commander
Chief of Staff	Army Commander
Director, Political Dept	Army Commander

The Command Post-Army position equivalents are either Army/Air Corps (jun), deputy Army/Air Corps (fujun), or Division (shi) commanders levels as shown below:

<u>Command Post Position</u>	<u>Army-Equivalent Position</u>
Dalian CP Commander	Army/Air Corps Commander
Tangshan CP Commander	Army/Air Corps Deputy Commander
Xian CP Commander	Army/Air Corps Commander
Wulumuqi CP Commander	Army/Air Corps Commander
Shanghai CP Commander	Army/Air Corps Deputy Commander
Wuhan CP Commander	Army/Air Corps Commander
Kunming CP Commander	Army/Air Corps Commander
Chengdu CP Commander	Army/Air Corps Commander
Lhasa CP Commander	Division Commander

1988 PLAAF RANK SYSTEM

On 1 October 1988, the PLA instituted a new rank system for the first time since ranks were abolished in 1965. When the ranks were re-instituted, the PLA as a whole had 17 three star, 146 two star, and 1251 one star generals and admirals. Of the 128 PLAAF general officers, there was only one general (three star) -- the commander. The exact number of lieutenant generals (two stars) and major generals (one star) were not specified. According to the PLA's Foreign Affairs Bureau, the PLAAF uses the following ranks and English equivalents:

<u>Chinese</u>	<u>English</u>	<u>Abbreviation</u>
Shangjiang (3 star)	General	Gen
Zhongjiang (2 star)	Lieutenant General	Lt Gen
Shaojiang (1 star)	Major General	Maj Gen
Daxiao	Senior Colonel	Sr Col
Shangxiao	Colonel	Col
Zhongxiao	Lieutenant Colonel	Lt Col
Shaoxiao	Major	Maj
Shangwei	Captain	Capt
Zhongwei	First Lieutenant	1Lt
Shaowei	Second Lieutenant	2Lt
Junshizhang	Master Sergeant	Msgt
Zhuanye Junshi	Technical Sergeant	Tsgt
Shangshi	Sergeant First Class	SFC
Zhongshi	Sergeant	SGT
Xiashi	Corporal	CPL
Shangdengbing	Private First Class	PFC
Liebing	Private	PVT

CIVIL SERVICE SYSTEM

In addition to re-instituting ranks, the PLA also implemented a civil-service (wenzhi ganbu) system in August 1988. As a result, the PLAAF reduced its number of active duty personnel considerably. For example, almost everyone except the key command personnel in the academies, research institutes, and headquarters administrative positions became civil servants. This move had its advantages and disadvantages -- key personnel such as those in research institutes, who would normally have to retire if they were not promoted to the next higher Army-equivalent position are now allowed to remain in their jobs until a much later age; however, this created rivalry between active duty and civil service personnel to determine who is higher or lower in the pecking order.

SECTION 3

STRATEGY AND DOCTRINE

The People's Liberation Army's (PLA) current strategy of "active defense" (jiji fangyu) consists of taking tactically offensive action within a basically defensive strategy. The defending forces undertake offensive operations in order to wear down the adversary while the enemy is strategically on the offensive and attacking. The PLAAF's two primary roles in the overall active defense strategy are to provide air defense for the nation and to support the ground forces.

Although the PLAAF has actually performed its two primary missions for over four decades, it apparently accomplished this for the most part without a formalized, written doctrine. Therefore, as a result of the problems encountered during the 1979 border war with Vietnam, the PLA drafted a proposal in 1982 outlining PLAAF utilization in Group Army field positional defensive campaigns. Even though the ground support role was defined in 1982, the PLAAF apparently still does not have a strategic air defense policy.

STRATEGIC AIR DEFENSE POLICY

In late 1988, the PLAAF's SAM and AAA Applied Research Center (kongjun dikong daodan, gaopao yingyong yanjiu zhongxin) published an article entitled "First Exploration Of An Air Defense Strategy," which addressed the need for a policy on air defense strategy. As late as February 1991, the Liberation Army Daily carried an article entitled "Formulate a Guiding Ideology on Active Air Defense." The 1988 article began by stating, "To date, the PLAAF's theoretical research has not yet formulated an air defense strategy. Therefore, as air defense modernization develops, research must be done on an air defense strategy." The article continued by discussing these three aspects of an air defense strategy -- complete deterrence; give priority to resisting an attack; and a timely counterattack.

COMPLETE DETERRENCE: The article stated that China already has a limited number of nuclear weapons as a nuclear deterrent to contain the enemy. At the same time, air defense power has a deterrent function to contain an enemy from using air raids. An effective air defense consists of SAM's interceptors, AAA, and ECM. China already has a certain scale of effective air defense deterrent force. If China can step up its modernization and reach the same level as those militarily strong countries around China who have a strong air raid capability, then China will be capable of avoiding a direct aerial confrontation. This will allow China's economy to develop quickly in a fairly stable and peaceful environment. From this it can be seen that overall deterrence is the best plan for China's air defense.

GIVING PRIORITY TO RESISTING AN ATTACK: China's strategic policy of active defense has determined that the first step in air defense operations is to resist an attack. Based on all of the capabilities of SAM's, this weapon system is the most developed and popular air defense weapon.

TIMELY COUNTERATTACK: From an overall air defense perspective, a defensive counterattack against an enemy's base is a more active combat operation than resisting an enemy attack; however, this type of attack is a defensive attack, and even this has its special requirements. Since China does not have the capability to conduct a large scale counterattack in the near future, China can only organize timely, small scale counterattack operations.

The article concluded that China's air defense strategy should be based on China's special characteristics of an active defense policy. Furthermore, the air defense strategy should be the guiding policy for building China's air defense and its air defense operations.

The 1991 article provided an historical perspective of air defense, and stated that the development of air defense weapons is moving toward "integration of both offense and defense, and of attack and counterattack." The article concluded by stating that China must formulate a guiding ideology on active air defense.

GROUND SUPPORT DOCTRINE

As a result of the lessons learned during the 1979 Sino-Vietnam border conflict, in 1982 the PLA established the doctrine for "Air Force utilization during the campaign to defend Group Army field positions" (jituan jun yezhan zhendi fangyu zhanyi kongjun de yunyong) during future wars.* This doctrine specified that the PLAAF will have the dual responsibility of defending China's airspace and of supporting ground forces. The Military Commission and PLAAF will establish a unified command (tongyi zhihui) for defending China's strategic points, based on the intentions of the General Headquarters (tongshuai bu). On the other hand, the PLAAF and Group Armies will organize to support ground forces, according to a fixed plan under the Front Army's (fangmian jun) command. Normally, Combined Arms units (hecheng jundui), Group Armies, and units below Group Armies do not have subordinate PLAAF units; however, according to the orders from higher echelons, some PLAAF troops are assigned to coordinate operations.

* The PLA reorganized its ground fighting forces in 1985 from an infantry-heavy field army (yezhanjun) structure to corps size units called "group armies" (jituan jun). Generally, group armies combine several infantry divisions with armor divisions or brigades, as well as artillery, engineering, anti-aircraft, communications and other specialty forces into an integrated, combined arms fighting force. Although the first references to a group army were not seen until 1985, the 1979 Sino-Vietnam border conflict provided the impetus for the development of the concept which was finalized in 1982.

PLAAF aviation troops can support Group Army operations due to their high degree of mobility and their ability to concentrate force in a short period of time. The main characteristics of the aviation troops in supporting field positional defense are as follows:

- Combat lines are relatively stable.
- The enemy is on the offensive, and China is on the defensive.
- The enemy's weapons and equipment are superior and China's are inferior.
- Support operations continue for a long period.
- The missions will be formidable, and organizing cooperation will be difficult.

Based on these characteristics, the PLAAF must abide by the strategic policy of "active defense," must carry out the combined principles of an active strike and tight defense, and must resolutely complete support operations as determined by the Combined Arms commander. Overall, the doctrine is divided into three parts -- Mission and Requirements; Command and Coordination; and Combat Actions.

MISSION AND REQUIREMENTS

MISSION

The PLAAF normally performs the following support missions for defending Group Army field positions:

- Gain air superiority along major defensive campaign directions and at key times, resist enemy air attacks, and provide cover and protection for the Group Army to deploy and carry out operational actions.
- Disrupt the enemy's attack plans, and quickly take the opportunity to seal off bridges, mountain passes, and important transportation routes that the enemy must use as it begins the attack.
- Wipe out and suppress the enemy which is assaulting defensive positions or breaking through defenses, and support ground troops who are defending important defensive areas.
- Support the campaign's reserve forces in counterattacks, and wipe out enemy forces who have broken through the defenses.
- Coordinate with the ground force units to destroy airborne troops.

- Conduct aerial reconnaissance.
- Carry out aerial transport, bombing, rescue, and communications support.

REQUIREMENTS

In order to best use aviation troops in defensive campaigns, and to effectively support ground force operations, the basic requirements for utilizing aviation troops are active support (jiji zhiyuan), concentrated use of air power (jizhong shiyong), flexible mobility (linghuo jidong), close coordination (miqie xietong), and tight protection (yanmi fanghu) for ground troops.

ACTIVE SUPPORT (JIJI ZHIYUAN): Each branch of the PLAAF and each unit must establish the philosophy that the victory is a ground force victory, and, in accordance with the uniform coordination action plan, beginning with the needs of the ground force units, take the initiative to cooperate and provide active support. It is necessary to make the best possible use of the capabilities of one's own weapons and equipment, using one's strengths to strike the enemy's weaknesses, and use inferior equipment to defeat an enemy with superior equipment. It is necessary to foster a combat style of bravery and tenacity, and of continuous combat to overcome various types of difficulties, and no matter what the cost, provide air support during key times and decisive stages of the campaign, actively completing support operations missions assigned by the Combined Arms commander.

CONCENTRATED USE OF AIR POWER (JIZHONG SHIYONG): "Concentrate superior forces to wipe out each and every enemy soldier" is the Army's traditional method of combat. It is the primary rule in defeating the enemy. In ground force unit field positional defensive operations, it is necessary to concentrate a limited amount of air support to be used along the main direction of ground defenses, and at key times during the campaign, to strike important targets which are the greatest threat. To strive to attain air superiority within a certain time and over a certain area, and to gain local air superiority and wipe out enemy troops to effectively support ground force units in completing their most important missions. It is especially important when aviation troops are small, to stress their concentrated use and ~~not~~ divide the forces. In order to ensure that aviation troops are concentrated in use, the campaign must:

- Deploy forces in a reasonable manner to ensure that, under dispersed conditions, they can mobilize large numbers and quickly concentrate them in a specific area.
- Control a certain amount of reserve forces to ensure they will not lose the opportunity to reinforce support operations along main defensive directions, or to attack a major target that has just appeared.

- Carry out a high degree of unified command to ensure that within the shortest possible time, support forces can be concentrated for use along main directions and at key times.

FLEXIBLE MOBILITY (LINGHUO JIDONG): Flexible mobility is an important aspect of air power. Only through the use of forces with flexible mobility is it possible to win major victories at a small cost. Flexible mobility includes the following:

- Timely concentration, dispersion, and shifting of military force.
- Clever use of weather, terrain, and the enemy's weaknesses to mask your intentions.
- Selection of tactics such as an advantageous flight route, low altitude, small formation, and multiple directions and flight levels to attack the enemy.
- Close attention to controlling the three links of timing, location, and unit.

CLOSE COORDINATION (MIOIE XIETONG): Close Army and Air Force coordination is an important precondition for success in modern Combined Arms operations. The principles for coordination are as follows:

- When conducting counterattacks or when resisting paratroop drops, the campaign reserves should be the primary force.
- When resisting encirclement, the unit responsible for the major mission should be the main force.
- Among the different PLAAF branches and units, that branch or unit tasked with the major operational mission should be the main force.
- The drafting of the coordinated action plan (xietong dongzuo jihua) is usually directed by the campaign commander (zhanyi zhihuiyuan) and his headquarters.
- When deciding on the missions of each type of force, the PLAAF should strike targets the ground forces cannot strike; and for major targets which must be attacked by more than one type of force, there must be close coordination to prevent casualties from friendly forces.
- During operational actions, aviation troops should act in accordance with the coordinated Army-Air Force action plan's strict rules of time, place, target, and requirements. They should also make best use of ground artillery to suppress the enemy's air defense forces and weapons to facilitate completion of the strike mission. When coordination is lost or disrupted, everyone should take whatever effective measures are appropriate to quickly adjust and reestablish coordination.

TIGHT PROTECTION (YANMI FANGHU): Tight protection is important for destroying the enemy, preserving yourself, and sustaining support for ground troops during combat. PLAAF airfields and air bases are important targets for the enemy, so China must adopt positive measures to enhance protection for aircraft, personnel, and all types of facilities. The primary measures for this are:

- Dispersing Forces (fensan peizhi) -- One airfield normally has one regiment, which will disperse under the proper conditions. The regiment should make complete use of civil, sod, and old airfields, as well as highways to disperse its aircraft. As an example, the November 1989 issue of Hangkong Zhishi (Aerospace Knowledge) described the first time use on 2 September of the Shenyang-Dalian Highway by three F-8 interceptors and one IL-14 transport as a dispersal runway. The F-8s landed singly and took off quickly in a three-ship formation.
- Camouflage and Concealment (yinbi weizhuang) -- This can be accomplished by making complete use of aircraft cave shelters, small hangars, single aircraft shelters, and dispersal areas, and by adopting camouflage measures, building false targets, and concealing the real and making the false obvious.
- Increasing civil-military cooperative defense of airfields, deploying air defense forces, establishing emergency repair teams, and strengthening ground and antiair defense for the airfields. Particular attention must be paid to cooperative defense of front line airfields, so that aviation troops can smoothly carry out their support missions.

COMMAND AND COORDINATION

COMMAND ORGANIZATION

PLAAF support for ground forces comes under the unified control of the Front Army, with the PLAAF and Group Armies organized to carry out the Front Army's orders. A Group Army is organized as part of the Front Army and is responsible for supporting operations. Normally, the PLAAF and an Army/Group Army set up an Operations Section (zuozhan xiaozu), or the PLAAF and an Army set up a Forward Command Post (qianzhi), which is responsible for organizing command. Bomber and ground attack aviation units assign a Target Controller Section (mubiao yindao zu) to coordinate directly with a ground force Division.

The Operations Section's primary missions are as follows:

- Receive orders and carry out the combat support mission.
- Relay the Combined Arms commanders' orders and requirements.

- Recommend how to use aviation troops.
- Report intelligence.
- Maintain close cooperation with the ground force unit.
- Control aircraft to strike the target.

The Target Controller Section's primary missions are as follows:

- Convey the ground force unit's air support request (kongyuan shenqing).
- Report intelligence.
- Maintain close cooperation with the ground force unit.
- Control aircraft to strike the target.

DRAFTING THE COORDINATED ACTION PLAN

Coordinated ground-air operations should be under the Combined Arms commander and the direction of its Headquarters Department, which call together representatives from every service and branch to jointly establish a coordinated action plan (xietong dongzuo jihua). The PLAAF's representatives should accurately understand the following:

- What the overall concept of the Group Army's field positional defensive campaign is.
- What the PLAAF's support mission is.
- How to report the PLAAF's situation.

■ How to recommend the proper use of the PLAAF

The PLAAF representatives should also make the following clear in the coordinated action plan:

- What the PLAAF's mission is and the total number of sorties that can be generated to support to ground units.
- What the overall mission is and the number of sorties during each phase of a campaign.

- What the separate areas are between the PLAAF, ground artillery, and tactical surface-to-surface missile units, etc., for attacking targets.
- How to establish coordinated communications liaison and methods with each concerned branch and unit to mutually report the situation.
- How to request timing and procedures for aviation troop sortie generation.
- What the timing and methods are for suppressing enemy ground air defense weapons.
- What the methods are for Army-Air Force liaison, mutual identification (xianghushibie/IFF), and indicating targets.
- What plan there is to deal with special circumstances.

The coordinated action plan is the foundation for Army-Air Force coordination. Aviation and ground force units must strictly carry out the plan in order to avoid an imbalance of ground-air coordination which leads to mistakenly harming friendly forces and influencing the outcome of the attack. If a new situation arises during the campaign that disrupts the coordinated action, then everyone must try as hard as possible to restore the originally agreed upon plan to deal with the situation.

METHODS FOR REQUESTING AIR SUPPORT

There are several methods for requesting air support and sortie generation. Normally, the requests are made according to the degree of urgency, the nature of the target, special characteristics of different aircraft, and determination of support requirements for Army-Air Force communications liaison. Based on China's current equipment, the primary methods are using an advance request (yuxian shenqing), acting according to a plan (an jihua jidong), or calling for an air strike (an jihua ting zhaohuan chudong).

ADVANCE REQUEST: This is an advance request for air support by ground units based on the Army-Air Force coordinated action plan. The procedures are as follows:

- The ground unit that needs support coordinates with the same level Air Force Operations Section or Target Controller Section, and passes information on the target, time, requirement, and expected attack results through the ground force's command system. After the information passes up through the command system echelon by echelon, then is finally reported as a whole to the Front Army Command Post. Advance requests can be proposed daily and can be carried out by stages (3 or 5 days).

- After the request is approved, the order is passed down through the Air Force's command system to the aviation unit to carry out. The Army's command system notifies the ground units that will receive the air support.

ACT ACCORDING TO A PLAN: After the advance request is approved and an aviation unit receives its support mission orders, the aviation unit completes advance preparations to carry out the support mission. The unit then acts according to the time schedule in the plan.

CALLING FOR AN AIR STRIKE: After the advance request is approved and an aviation unit receives its support mission orders, the aviation unit completes advance preparations to carry out the support mission according to the ground unit's requirements. The aviation unit does not act until it receives a call. Call procedures are as follows:

- A ground unit proposes the strike up to the Combined Arms Command Post, either echelon by echelon or skip echelon. At the same time, the Air Force Operations Section is reporting to the same level's Air Force Command Post. After the strike request receives the Group Army commander's approval, the Air Force command system passes orders down to the aviation unit to act.
- The call for an air strike must have a set amount of advance time, and must take into consideration the transmission time, the time for the aviation unit to organize for action, and the necessary time to fly to the target.

During coordinated Army-Air Force operations, there is also a method for a type of temporary request (linshi shenqing) for emergency action. If a ground forces unit temporarily proposes a request for air support based on a new situation that arises during a battle or on a new target, an aviation unit can act quickly. Under these conditions, there is no way to make an advance plan, so preparations will be hasty, the pilots will not have enough time to become familiar with target material and understand the relevant situation, and the aircraft that are sent out to a target with unknown characteristics may carry inappropriate weapons; therefore, it is oftentimes difficult to achieve good attack results.

METHODS OF COORDINATING ACTION

Coordination between ground force artillery units and PLAAF bomber and ground attack aircraft units normally is organized on the method of target and time differentiation, and the following must be clear:

- Which targets are whose.
- Times for attacking each target.
- The height of each ground artillery shell's trajectory.

- Each aircraft's operating altitude.
- Times and methods for the ground artillery to indicate targets for aviation troops and for ground artillery to suppress enemy defenses.

The primary means of coordination between aviation troops and ground air defense units is air space differentiation (qufen kongyu). Besides this, they can coordinate using the methods of target, altitude, and heading differentiation.

When bomber and ground attack aircraft units strike targets along the battle line, they must be clear on the principles of bombing at a safe distance. In addition, when friendly aircraft pass through the battle line, everyone must be clear on the methods of time, sorties, sectors and altitude, ground-air identification, and target identification. There must also be methods for communicating with the Operations Section and Target Controller Section.

At the present time, the primary methods for ground-air target recognition and identification, and marking the battle line includes the use of IFF, small navigation beacons, beacon markers, air-to-ground remote control smoke generating equipment, and aircraft-launched color signal flares. Ground units discharge smoke screens and arrange panel signals. Radio signals are the primary means of communication, and visual signals are the alternate means. Visual signals should be selected according to the season, weather, and terrain characteristics. They should accurately grasp the timing, and pay attention to security to avoid revealing friendly force movements and intentions to the enemy.

COMBAT ACTIONS

SEIZING LOCAL AIR SUPERIORITY AT KEY TIMES IN THE CAMPAIGN

Local air superiority (jubu zhikongquan) is the power to control the initiative of a certain air space during a certain time. Grasping air superiority is the most effective method of protecting and supporting ground unit operations. The two methods for aviation troops to gain air superiority are aerial combat (kongzhong jiaozhan) and attacking enemy airfields (tuji di jichang).

Since China's aviation power is relatively weak today, the PLAAF should use aerial combat as the primary method and attacking enemy airfields as the alternate method. When engaging in aerial combat, bombers and ground attack aircraft are the primary means of conducting attacks on the enemy's major airfields in order to destroy aircraft, kill personnel, damage the runway and other important facilities, and weaken and suppress other attacking forces. During the planning and implementation phases, however, China must be careful to conceal friendly force intentions and cleverly choose the right time in order to be successful.

Interceptors are the primary means of conducting aerial combat in order to impede, slow up, and destroy the enemy's air strike weapons. During the planning and implementation phases, the PLAAF should combine airfield alerts, aerial reconnaissance, and airborne search and destroy missions in order not to lose the opportunity to destroy the enemy's air attack.

After attacking an airfield, the PLAAF should use a few interceptors or ground attack aircraft to select the appropriate time to conduct blocking actions against the enemy's airfield, or use a few ground attack aircraft, in coordination with local forces and the militia, to attack the enemy's important radar stations and communication facilities in order to destroy and disrupt the enemy's operations command.

DESTROYING ENEMY PREPARATIONS TO ATTACK

In order to make use of the Group Army's combat preparedness and to inhibit the enemy's preparations to attack, aviation troops should be timely in countering the enemy's aerial attack, striking the enemy while it is waiting for the opportunity to attack, and, under the proper conditions, the PLAAF should carry out aerial firepower counter-preparations.

RESISTING ENEMY AIR ATTACK PREPARATIONS: In order to oppose the enemy's aerial firepower preparations (kangji diren de hangkong huoli zhunbei) and to protect friendly ground forces and important targets in the war area, the PLAAF's interceptors are used as the primary means to attack the enemy's bombers and fighter-bombers on their way. During intervals between the enemy's attacks, the PLAAF can use a part of its bomber force to conduct brief, vicious counterattacks against the enemy's primary forces, such as the largest artillery and tactical rocket positions used for attacking friendly ground forces. At the same time, the PLAAF must organize to protect its airfields against enemy air raids, and make every effort to avoid or reduce losses.

STRIKING ENEMY HOLDING AREAS AND ADVANCING FORCES:

Depending upon the overall situation, the PLAAF needs to accurately use its aviation troops to attack the enemy while it is waiting for the opportunity to attack. The purpose of this attack is to destroy the enemy during its main preparatory period, with the goal of weakening the enemy's attack forces and delaying its offensive actions.

- The primary targets for the attack are the areas where the enemy is massing its forces, such as tanks and armored vehicles, etc.
- The best time for the attack is before the enemy has dispersed or concealed its forces in the massing area, just before they depart, or as the tanks and mechanized units pass over bridges, through passes, or along roads where maneuver is difficult.

- The PLAAF uses various combat methods during an attack, such as using the proper aviation weapons based on the target's characteristics, and conducting aerial mine laying along routes the enemy must take.

CARRYING OUT AIR FIREPOWER COUNTER-PREPAREATIONS: The primary mission of air firepower counter-preparations (shishi hangkong huoli fanzhunbei) is to coordinate with the ground artillery against the main attacking group, in order to attack in strength to weaken the enemy's attack forces and to delay the enemy's attack.

The PLAAF normally uses bomber and ground attack aircraft units, protected by interceptors, to attack the enemy's first echelon divisions, tactical missiles, rockets, and artillery. Under certain circumstances, the PLAAF should also attack first line airfields that have fighter-bombers assigned.

The best time to use air firepower counter-preparations is just before the enemy conducts its firepower preparations, but this timing is difficult to control. In order to organize at the appropriate time, the campaign command personnel must use each type of reconnaissance to clearly determine and keep track of the enemy situation, make the proper evaluation, and organize unit action.

The length of time for air firepower counter-preparations is determined by the nature of the target, the size of forces involved and the power of the weapons. Normally, it is required that there be relatively intense firepower for a short period of time, concentrating the assault to deal a serious blow to the attacking enemy. The duration is determined by the specific situation.

When organizing air firepower to counter-preparations, the PLAAF must retain a certain amount of reserve forces in order to cope with an enemy attack after the counter-preparations attack.

SUPPORTING GROUND FORCES IN RESISTING ENEMY ATTACKS AND HOLDING MAJOR DEFENSIVE AREAS

Air Force support to the ground units to protect positions and impede enemy attacks is the most intense aspect of war. The PLAAF uses its ground attack aircraft, bombers, and interceptors to carry out this mission as follows:

- Ground attack aircraft will be used primarily for air firepower support of important positions.
- Bombers can also be used to conduct raids against the advancing enemy.
- Interceptors can be used against enemy bombers and armed helicopters that are trying to attack defensive positions.

Right after the enemy initiates an attack, the PLAAF should seize the opportunity to conduct air firepower support. The main targets during an attack should be based on the intentions of the Combined Arms commander and the enemy's attack situation. Based on these, the PLAAF can provide effective firepower support to the ground units and influence the battle along the front. Normally, the PLAAF's mission is to destroy or suppress enemy artillery and tactical missiles supporting the assault, and to attack the enemy's tank and armored troops massing in the rear.

As soon as the enemy breaks through the PLA's front line positions, the PLAAF's ground attack aircraft units should coordinate with artillery units to attack the enemy's artillery and rocket positions. Bomber units should be used to attack the enemy's second echelon forces, to impede them from entering the attack, and to coordinate quickly with obstacle-emplacing units to carry out aerial mine laying, support defending units, quickly close up attack avenues, and stop the enemy from expanding its attack.

When the enemy conducts a tactical nuclear strike in order to make a breach in the PLA's lines, the PLAAF should use its ground attack aircraft units to attack the enemy's massed armor that is entering the attack area, and to support ground units to impede the enemy from entering deeper into friendly territory.

In order to provide smooth support to ground units who are defending positions, aviation units should clearly understand the ground troops' locations and targets, should make early preparations for action, and then should wait for the call to attack.

SUPPORTING GROUND FORCE UNIT COUNTERATTACKS

A counterattack is meant to 1) destroy an attacking enemy which has broken through, and 2) to stabilize the defensive posture. This is an important time for the PLAAF's aviation troops, who must concentrate their force to carry out support to the counterattacking units.

PROVIDING COVER FOR THE COUNTERATTACKING UNIT: In order to ensure the safety of friendly counterattacking units during movement and during combat, the PLAAF should use interceptor units to coordinate with AAA and SAM units to strengthen air cover. In order for aviation troops to complete their air cover mission, they should always know the counterattacking units' deployment area, movement times, route, and engagement areas, and should especially know the limited time and area for gaining local air superiority. The PLAAF should also understand the methods for coordinating operations with each type of air defense weapon in order to coordinate all actions.

LAUNCHING AN AIR ASSAULT: In order to ensure that ground units can smoothly conduct a counterattack and destroy the enemy who has encroached deeply into the PLA's defensive area, the PLAAF will normally use bomber and ground attack aircraft units before the ground forces launch their counterattack to destroy and suppress important enemy targets in the area where friendly forces will conduct the main attack.

The procedures for friendly aviation, artillery, and rocket units to carry out an attack in terms of place, target, time, and force is decided by the campaign commander. The aviation troop commander can also make target recommendations based upon the intentions of higher echelons. As such, the aviation troop commander proposes ideas and requests approval from the campaign commander. Under normal conditions, an air attack's main targets are the enemy's tactical missiles, rockets, massed artillery, tanks, and massed armor directly in front of the PLA's counterattacking units, as well as the rear echelon units and command posts, etc.

The timing for an attack with air power is usually prior to, or at the same time as, a ground artillery offensive. When friendly ground force units conduct a night counterattack, the PLAAF generally does not carry out an air power attack.

When the ground troops are counterattacking, the air and ground situation changes quickly. In order to guard against mistakenly injuring friendly troops, friendly forces must strictly adhere to the principles of ground-air cooperation, strengthen ground-air liaison, accurately understand the battlefield situation and targets' positions, clearly regulate the bombing safety line and air-to-ground IFF, as well as methods for the ground to identify targets for the aviation troops, etc.

SUPPORT COUNTERATTACKING UNITS TO DESTROY THE ATTACKING ENEMY: In order to provide cover for counterattacking units and to ensure that they split up, surround, and destroy the attacking enemy, the PLAAF should use ground attack aircraft units to coordinate with ground artillery to destroy and suppress the enemy's massed tanks and armor, artillery, and tactical missiles, as well as those primary firepower positions being used against friendly forces. Bombers and ground attack aircraft should be concentrated as a main force to attack the enemy's rear echelon units and those reinforcing the enemy, to slow down their movement, and isolate the reserve forces. Interceptors should be used to reinforce air cover and ensure the safety of the main strength of the counterattacking force, to blockade the surrounded enemy, and to keep the enemy from receiving air support and resupplies. After the ground troops successfully counterattack, aviation troops should continue to move and adjust deployments to provide cover and support for the counterattacking units.

COORDINATE WITH GROUND FORCE UNITS TO DESTROY AIRBORNE TROOPS

Aviation troop coordination with ground units to destroy enemy airborne troops is an important function in shattering the enemy's attack and in stabilizing the defensive posture. When enemy airborne troops are massing and waiting to depart, the ideal situation for the PLAAF is to use its bombers to conduct attacks and destroy them at the air base. However, the PLAAF's operational capability is limited, and can only organize to carry this out under certain conditions.

The campaign commander should use various reconnaissance methods to determine the enemy's actions in a timely manner, to be ready to take advantage of any combat opportunity, and carry out continuous attacks at the farthest distance possible. Once the enemy's troops are loaded and en route, the PLAAF should use its interceptors as the primary method of attacking the aircraft in the air. This is the aviation troops' most advantageous time to counter airborne operations.

When the enemy's airborne troops are landing, the PLAAF should use its bombers and ground attack aircraft units to attack before they get a foothold. The PLAAF should bottle up their advancing route, attack those airborne forces moving toward defensive positions, and directly support the counter-airborne operational units to surround and destroy the airborne troops.

In order to protect ground units who are countering airborne operations, PLAAF interceptors should, under certain conditions, coordinate with the ground air defense troops to seize local air superiority over the area where the ground troops are countering airborne operations.

During operations to counter airborne forces, time is urgent because the situation changes. Therefore, there must be a pre-arranged, coordinated anti-airborne operations plan between the Army and Air Force, and aviation troops must have advance planning and preparation. As a result, unified command and communications must be established quickly in the operations area to carry out uninterrupted command.

AERIAL RECONNAISSANCE

Aerial reconnaissance is one of the primary means of obtaining intelligence so the campaign commander can make timely decisions and act accordingly. Aerial reconnaissance can be done in a relatively short, timely period to ascertain the enemy's force deployment, direction of movement, and the situation of the rear area facilities and transportation, etc.

Normally, the PLAAF and Group Army, primarily using specialized reconnaissance units, conduct campaign aerial reconnaissance according to the Front Army commander's intentions. Aviation units, primarily using an Air Division's subordinate Reconnaissance Flight (zhencha fendui), carry out tactical aerial reconnaissance according to the Group Army commander's orders and requirements. In addition, any type of combat aircraft can conduct visual reconnaissance missions. If an Air Division's subordinate Reconnaissance Flight cannot satisfy operational needs, the campaign commander can request the Front Army to have the Air Force-Group Army dispatch reconnaissance forces.

Aerial reconnaissance activity is conducted throughout the defensive campaign. During the campaign preparation phase, PLAAF reconnaissance should clearly focus on the enemy's forces massing along the friendly force's defensive front, especially the enemy's

missiles, nuclear weapons, artillery, and tanks, as well as their campaign reserve forces deployment area, and activities that could lead to carrying out an attack.

During the campaign itself, reconnaissance forces should also clearly focus on the developing situation of the enemy's attack, the enemy's reserve forces movement forward, and the enemy's situation on the flanks of the PLA's counterattacking troops.

The results of aerial reconnaissance should be combined with material from all forms of reconnaissance into a synthesized analysis. After checking the analysis, it can then be used as data for the campaign commander to make operational plans and command the operations.

All of the above combat actions are based on the requirements of defending a Group Army field position and what the PLAAF can do to carry out its mission. In future defensive operations, the PLAAF can only focus on organizing itself to carry out its mission based on the enemy and friendly situation, on the campaign command commander's intentions, and on the principle of using concentrated power.

SECTION 4

HEADQUARTERS AIR FORCE

Headquarters Air Force (HqAF/kongjun)* consists of a command staff, administrative organization, specialized commissions, and directly subordinate units. HqAF also has a Party Committee and Party Standing Committee, which represents the PLAAF as a whole. In addition, each element within HqAF that has the Army-equivalent status (zhiwu dengji) equal to or higher than a regiment (tuan) has a Party Committee.

COMMAND STAFF

The HqAF command staff consists of the commander (silingyuan), political commissar (zhengzhi weiyuan/zhengwei), four deputy commanders, two deputy political commissars, plus

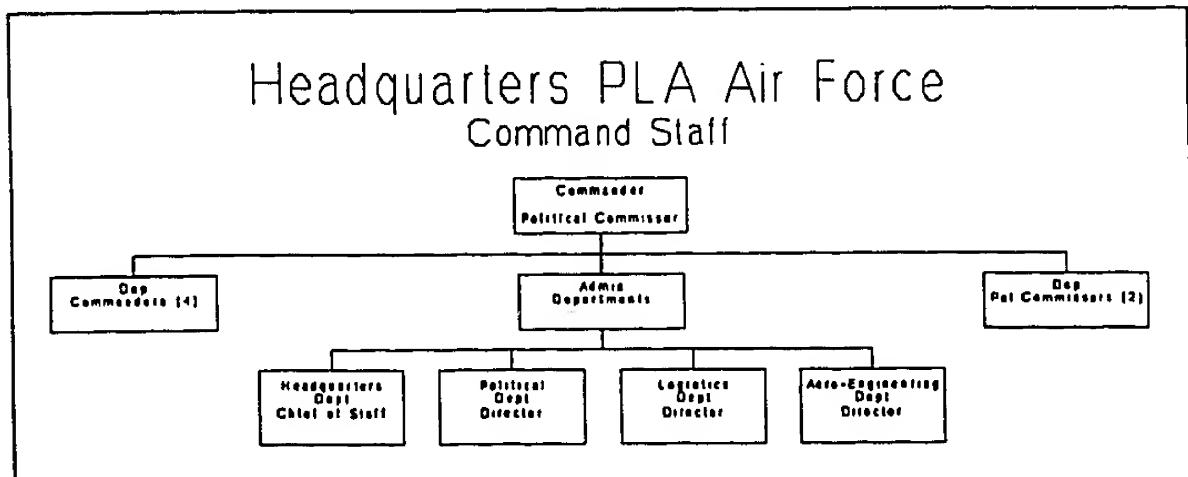


Figure 1

the chief of staff (canmouzhang), who is the director of the Headquarters Department, the director (zhuren) of the Political Department, the director (buzhang) of the Logistics Department, and the director (buzhang) of the Aeronautical Engineering Department (Figure 1). The four deputy commanders are responsible for the primary areas of training, logistics/R&D/equipment, operations (aviation & airborne), and air defense (SAM, AAA, and radar), plus several secondary responsibilities. As can be seen from Figure 2, these responsibilities are concentrated in the Headquarters Department.

* The term "kongjun" means the Air Force as a whole, but it also means Headquarters Air Force (HqAF). When seen in a newspaper or book, the exact meaning is usually clear. The term "jiguan" or "lingdao jiguan" means a headquarters and/or command staff.

HqAF, which also represents the PLAAF as a whole, has a Party Committee (dangwei) and Party Standing Committee (dangwei changwei), of which the political commissar is the secretary (shuji) and the commander is the deputy secretary (fushuji). The Standing Committee consists of the command staff. The PLAAF Party Committee consists of the Standing Committee plus all seven MRAF commanders and political commissars.

The command staff and the directors of each of the HqAF, MRAF Headquarters, and Command Post administrative elements are equivalent to positions in the Army at the Military Region (MR/da junqu), Army (jun), division (shi), and regiment (tuan) level. In fact, all PLAAF positions have an Army-equivalent position down to the lowest level. As a result, a person's rank is still not as important as the Army-equivalent position that person holds. In addition to the HqAF-Army position equivalents shown below, the directors of all HqAF's second level departments are equivalent to division (shi) commanders.

<u>HqAF Position</u>	<u>Army Equivalent</u>
Commander	MR Commander
Political Commissar	MR Commander
Deputy Commander	MR Deputy Commander
Deputy Political Commissar	MR Deputy Commander
Chief of Staff	MR Deputy Commander
Deputy Chief of Staff	Army Commander
Director, Political Dept	MR Deputy Commander
Director, Logistics Dept	MR Deputy Commander
Director, Aero-Engineer Dept	Army Commander

The chief of staff and deputy chief(s) of staff at each level in the operational chain of command (HqAF, MRAF, Air Corps/Command Post, and operational unit) are responsible only for the Headquarters Department and are not in the administrative chain of command between the other three first level departments and the commander/political commissar. As shown above, the chief of staff, as the director of the Headquarters Department, is equal to the directors of the Political and Logistics Departments, while the deputy chiefs of staff are equal to the deputy directors. Each of the four deputy chiefs of staff has a broad range of responsibilities, which may cross one or more of the Headquarters Department's second level departments. In addition, their responsibilities do not necessarily match one-for-one with those of the four deputy commanders.

The directors of the four first level departments work directly for the commander/political commissar and do not necessarily have to go through one of the deputy commanders. All staff actions within the first three departments must first go through their respective department's second level General Office (bangongshi) before reaching the director. Within the Logistics Department, all actions must go through that department's second level Headquarters Department (it does not have a general office). Therefore, the director and deputy directors within the General Offices are extremely powerful and important.

ADMINISTRATIVE ORGANIZATION

The administrative organization (xingzheng jigou/tizhi) at HqAF includes the four big/first level departments (4 da/yiji bu), plus their second level departments/bureaus (erji bu).

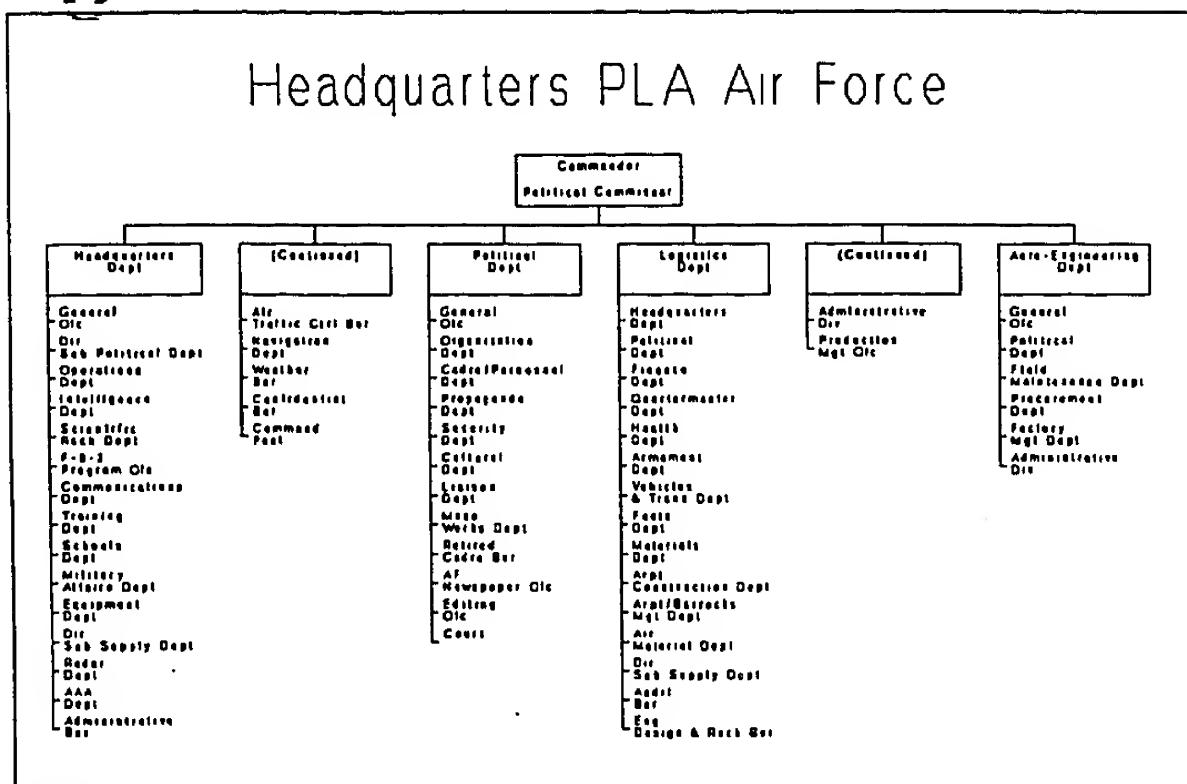


Figure 2

The collective elements within any of the administrative elements are referred to as bumen. For example, the Logistics Department as a whole is referred to as the houqin bumen. Altogether, administrative elements within HqAF include departments (bu), bureaus (ju), divisions (chu), offices (shi/ke), and sections (zu). The four first level departments and their Chinese acronyms are shown below:

<u>DEPARTMENT</u>	<u>CHINESE</u>	<u>ACRONYM</u>
Headquarters	Siling bu	Kongsi
Political	Zhengzhi bu	Kongzheng
Logistics	Houqin bu	Konghou
Aeronautical Engineering	Hangkong gongcheng bu	Konggong

In addition, each of the second level elements also has an acronym. For example, the Headquarters Department's second level Directly Subordinate Political Department (kongjun siling bu zhishu zhengzhi bu) is referred to as kongsizheng or sizheng. Within the Logistics and Aeronautical Engineering Departments, all desk officers are referred to as assistants (zhuli), but in the Headquarters and Political Departments, they are referred to as staff officers (canmou) or secretaries (mishu).

THREE GENERAL DEPARTMENTS

The PLAAF's four first level departments are based on the organization of the General Staff Department (GSD), General Political Department (GPD), and General Logistics

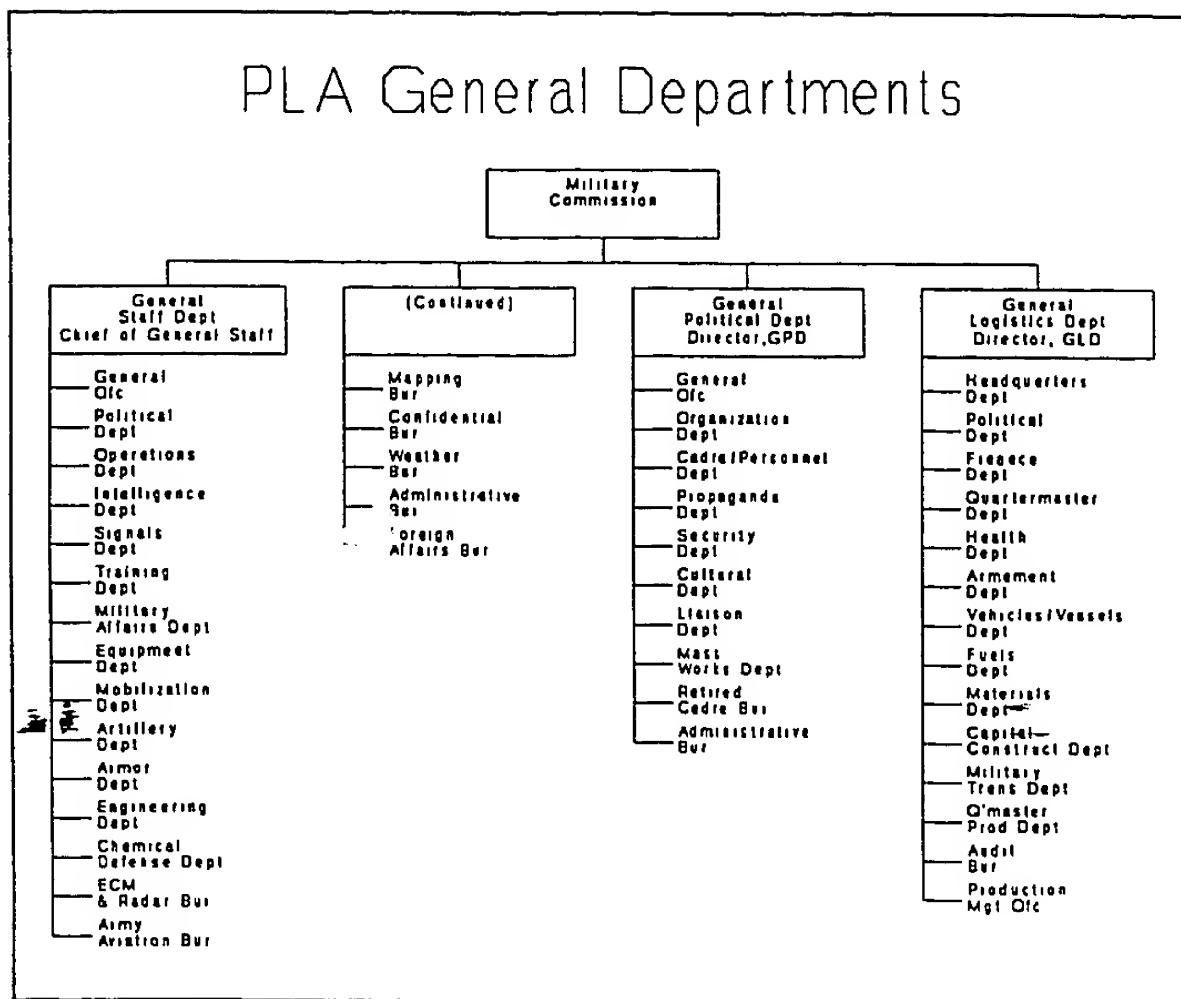


Figure 3

Department (GLD), which are referred to as the three general departments (san zongbu) as shown in Figure 3.

GENERAL STAFF DEPARTMENT

The 20 first level administrative departments within the General Staff Department (zongcanmou bu/zongcan) are as follows:

General Office (bangongting)

Political Department (zhengzhi bu)

Operations Department (zuozhan bu)

Intelligence Department (qingbao bu)

Signals Department (tongxin bing bu)

Training Department (xunlian bu)

Military Affairs Department (junwu bu)

Equipment Department (zhuangbei bu)

Mobilization Department (dongyuan bu)

Artillery Department (pao bing bu)

Armor Department (zhuangjia bing bu)

Engineering Department (gongcheng bing bu)

Chemical Defense Department (fanghua bu)

Electronic Countermeasures and Radar Bureau (dianzi duikang leida ju)

Army Aviation Bureau (luhang bing ju)

Mapping Bureau (cehui ju)

Confidential Bureau (jiyao ju)

Weather Bureau (qixian ju)

Administrative Bureau (guanli ju)

Foreign Affairs Bureau (waishi ju)

GENERAL POLITICAL DEPARTMENT

The 10 first level administrative departments within the General Political Department (zongzhengzhi bu/zongzheng) are as follows:

General Office (bangongting)

Organization Department (zuzhi bu)

Cadre/Personnel Department (ganbu bu)

Propaganda Department (xuanchuan bu)

Security Department (baowei bu)

Cultural Department (wenhua bu)

Liaison Department (lianluo bu)

Mass Works Department (qunzhong gongzuo bu/qungong bu)

Retired Cadre Bureau (lao ganbu ju)

Administrative Bureau (guanli ju)

GENERAL LOGISTICS DEPARTMENT

The 14 first level administrative departments within the General Logistics Department (zongtouqin bu/zonghou) are as follows:

Headquarters Department (siling bu)

Political Department (zhengzhi bu)

Finance Department (caiwu bu)

Quartermaster Department (junxu bu)

Health Department (weisheng bu)

Armament Department (junxie bu)

Vehicles & Vessels Department (che chuan bu)

Fuels Department (youliao bu)

Materials Department (wuzi bu)

Capital Construction Department (jijian yingfang bu)

Military Transportation Department (junshi jiaotong bu)

Quartermaster Production Department (junxu shengchan bu)

Audit Bureau (shenji ju)

Production Management Office (shengchan guanli chu)

PLA ADMINISTRATIVE STRUCTURE

Figure 4 shows a comparison of the first level administrative structure for the PLA's three general departments, three services (Navy, Air Force, and Second Artillery/strategic

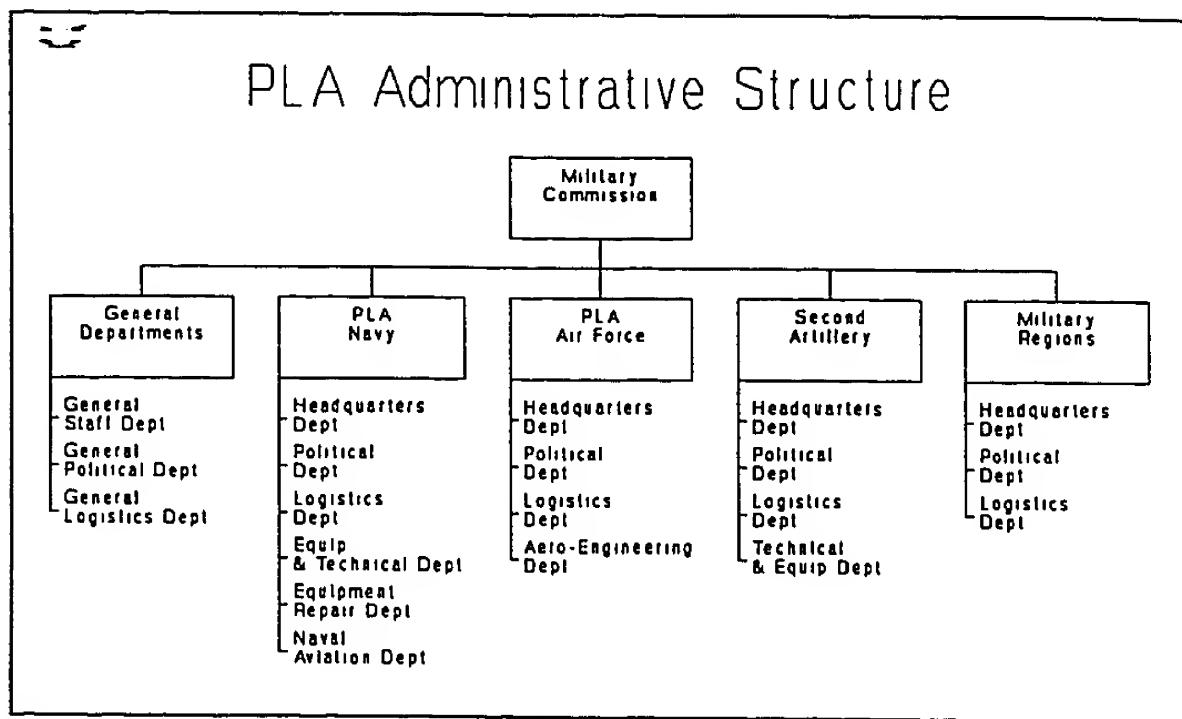


Figure 4

rocket forces), and the Military Regions.

General Departments (san zongbu)

General Staff Department (zongcanmou bu/zongcan)

General Political Department (zongzhengzhi bu/zongzheng)

General Logistics Department (zonghouqin bu/zonghou)

PLA Navy (jiefang jun haijun)

Headquarters Department (siling bu)

Political Department (zhengzhi bu)

 Logistics Department (houqin bu)

Equipment & Technical Department (zhuangbei jishu bu)

Equipment Repair Department (zhuangbei xiuli bu)

Naval Aviation Department (hangkong bing bu)

PLA Air Force (jiefang jun kongjun)

Headquarters Department (siling bu)

Political Department (zhengzhi bu)

Logistics Department (houqin bu)

Aeronautical Engineering Department (hangkong gongcheng bu)

Second Artillery (jiefang jun dier pao bing)

Headquarters Department (siling bu)

Political Department (zhengzhi bu)

Logistics Department (houqin bu)

 Technical & Equipment Department (jishu zhuangbei bu/jizhuang bu)

Military Regions (da junqu)

Headquarters Department (siling bu)

Political Department (zhengzhi bu)

Logistics Department (houqin bu)

COMMISSIONS

In addition to the administrative elements, HqAF also has several specialized commissions, some of which are listed below:

- The PLAAF Aviation Commission (hangkong bing weiyuanhui) is chaired by the deputy commander in charge of equipment and R&D. The day-to-day administrative affairs for design finalization and the PLAAF commission are handled by the Aviation Finalization Office (hangkong dingxing bangongshi/hangdingban) within the Headquarters Department's Scientific Research Department (keyan bu).
- The Aviation Military Products Design Finalization Commission (hangkong jungong chanpin dingxing weiyuanhui/hangdingwei) was established in Beijing in January 1962, and was composed of members from the Ministry of Aviation and the PLAAF. Although it ceased working during the Cultural Revolution, it was revived in 1973. Today, the commission is chaired by the deputy commander in charge of equipment and R&D.
- On 17 September 1983, the PLAAF Science and Research Commission (kongjun xueshu yanjiu weiyuanhui) was established in Beijing.
- In October 1984, the PLAAF Flight Safety Guidance Commission (kongjun feixing anquan zhidao weiyuanhui) was established in Beijing, with the PLAAF commander as the chairman. It is composed mostly of retired senior officers.
- A Discipline Inspection Commission (jilu weiyuanhui) is chaired by the senior deputy political commissar.

DIRECTLY SUBORDINATE UNITS

Finally, HqAF has several directly subordinate units (zhishu budui), such as the 34th Air Division with its headquarters at Beijing Xijiao airport, the Test Flight and Training Center (shifei xunlian zhongxin) at Cangzhou airfield in Hebei Province, the Air Force Command College (kongjun zhihui xueyuan) in Beijing, research institutes (yanjiusuo), logistics units (houqin budui), a military procuratorate (junshi jiancha yuan), hospitals (yiyuan), and retired cadre sanatoriums (ganxiusuo). Each directly subordinate unit has its own Party Committee.

The Directly Subordinate Military Procuratorate (zhishu junshi jiancha yuan) investigates matters requiring disciplinary action. This office works closely with the PLAAF's Discipline Inspection Commission (jilu jiancha weiyuanhui), which is chaired by the senior deputy political commissar, and the Political Department. Most of the people who work in the Procuratorate have been trained in the political system.

SECTION 5

HEADQUARTERS AIR FORCE, HEADQUARTERS DEPARTMENT

The Headquarters Department (kongjun siling bu/kongsi) consists primarily of operations and training, and is responsible for organizational structure, equipment planning, and recruiting. With the exception of the Command Post, the Headquarters Department is an administrative, not an operational, organization. As such, it writes the rules and regulations that govern PLAAF operations and training. The chief of staff is the director and the four deputy chiefs of staff are the deputy directors. There are at least twenty second level departments, bureaus, and offices, whose directors are senior colonels or colonels.

The Headquarters Department is administratively responsible for all of the PLAAF's five operational branches (bingzhong). Although there are separate second level departments which are responsible for the radar, communications, and AAA/SAM troops, there are no separate departments for airborne or aviation troops. The reason there is not a separate aviation department today is that originally all of the existing departments supported the aviation troops. As the other branches such as communications and radar expanded, they required separate administrative departments to handle their affairs. The Operations and Training Departments have primary responsibility for airborne troops.

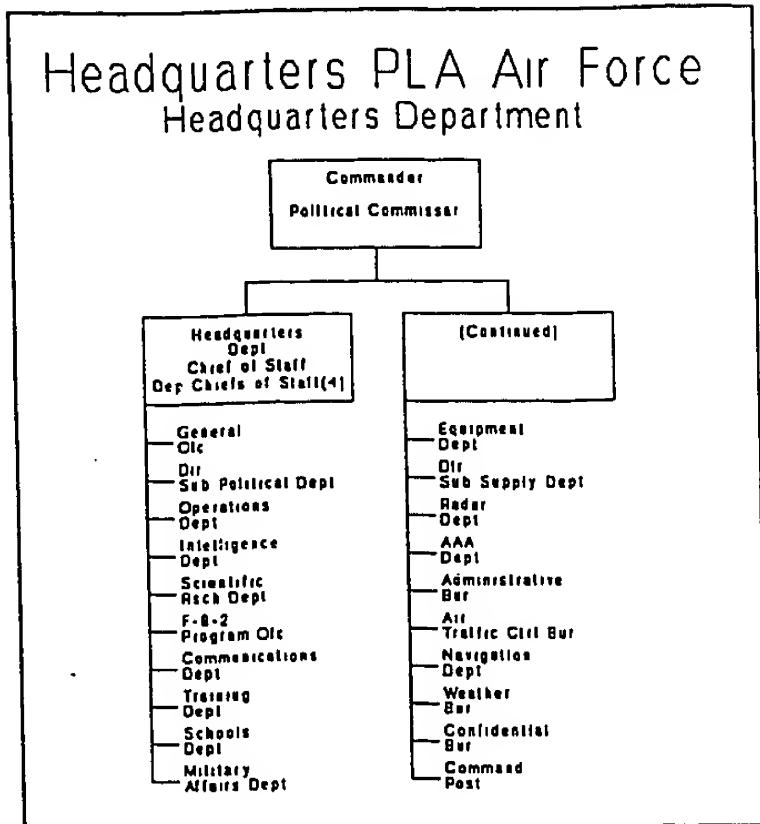


Figure 1

GENERAL OFFICE

The General Office (bangongshi) is responsible for reviewing all the paperwork going to the command staff from any of the Headquarters Departments second level departments. The General Office has a director (zhuren) and three deputy directors. One deputy director is responsible for foreign affairs; one is responsible for political work; and one is responsible for all other matters. Assistants (zhuli) for the political commissar and deputy political commissars also work in the General Office. All the members of the Documents Division and Translation Unit were converted to civilians under the civil service system. The General Office has at least five subordinate divisions.

- Secretariat Division (mishu chu)
- Documents Division (guan dangan chu)
- Foreign Affairs Division (waishi chu)
 - The Translation Unit (fanyi dui) has a pool of trained translators who can be used as needed throughout the Air Force.
 - The First Division (yi chu) has staff officers who serve retired senior officers, such as commanders, deputy commanders, chiefs of staff, and deputy chiefs of staff.
 - The Second Division (er chu) has staff officers who serve retired senior political officers.

DIRECTLY SUBORDINATE POLITICAL DEPARTMENT

The Directly Subordinate Political Department (zhishu zhengzhi bu) is responsible for political affairs within the Headquarters Department. It is known as kongsizheng or sizheng. It has its own Party Committee (dangwei) and at least three divisions.

- - The Cadre/Personnel Division (ganbu chu) is responsible for all personnel matters within the Headquarters Department.
- Organization Division (zuzhi chu)
- Propaganda Division (xuanchuan chu)

OPERATIONS DEPARTMENT

The Operations Department (zuozhan bu) is responsible for all operational matters, including airborne and SAM/AAA operations, while the other departments (i.e. radar, communications, etc.) are responsible for the technical matters. Although there is a AAA department, there is no separate airborne department. The Operations Department has just over 40 people, including a political commissar, and four subordinate divisions. The divisions are not further divided into offices.

- The First Division (yi chu) is responsible for daily operations. Action officers are responsible for each of the major operational elements, such as radars, communications, fighters, bombers, AAA, SAM, etc.
- The Second Division (er chu) is responsible for operations plans, and, like the first division, has individuals from each operational area.
- The Command Division (zhihui chu) is responsible for issuing the orders to lower units and receiving messages from them.
- The Airfield Management Division (guanchang chu) is responsible for overall airfield operations.

INTELLIGENCE DEPARTMENT

The Intelligence Department (qingbao bu) is organized into four divisions along functional lines.

- The Aerial Reconnaissance Division (hangkong zhencha chu) is responsible for all aspects of aerial reconnaissance, including photo interpretation.

SCIENTIFIC RESEARCH DEPARTMENT

On 18 March 1958, the PLAAF established the Air Force Military Scientific Research Department (kongjun junshi kexue yanjiu bu) as a first level administrative organization, with Deputy Commander Chang Qiankun as the first director. In addition, a Scientific Research Guidance Commission (kexue yanjiu zhidao weiyuanhui) was established at units (danwei) of regiment level and above, and each MRAF established a Scientific Research Office (keyan shi). Today, the Scientific Research Department (keyan bu), which is similar to the USAF systems command, has a director and four deputy directors. This department is responsible for evaluating and monitoring the PLAAF's weapons R&D plans and programs, and for reporting their operational requirements, as well as their tactical and technical criteria, to higher authorities. The department also researches and drafts the PLAAF's weapons

development technical policies, as well as drafting the necessary rules and regulations for implementation.

In order to carry out its mission, the Scientific Research Department is divided into three general areas: -- integration (zonghe), technical (jishu yewu), and information/data (qingbao ziliao). In addition, it has special research units, military factory representatives, acceptance testing and test flight units, and training centers. The department has 112 administrative personnel assigned (23 are military civil service and the rest are active duty). Their average age is 37 years old, and 98 percent are university (military and civilian) graduates. As a rule, in order to work in the department, personnel must have worked in one of the assigned research institutes first. This department is responsible for the planning, budgeting, and establishing of requirements for all of the research institutes within the Headquarters Department.

The INTEGRATION AREA includes the following divisions and assigned personnel:

- The Plans Division (jihua chu) has 13 people.
- The Finance Division (caiwu chu) has 12 people.
- The Test Flight Division (shifei chu), which has 11 people, manages the flight test program. The PLAAF's missile test base (daodan shiyan jidi) in northwest China and the flight test portion of the Flight Test and Training Center (feixing shifei xunlian zhongxin) at Cangzhou Airfield, Hebei Province, are also under the Scientific Research Department's functional control through this division.
- The Technical Innovation Division (jishu gexin chu) has 10 people. When someone at a unit develops a new technique or a piece of equipment, they submit it through the proper channels to this division. This division is also responsible for the budget, regulations, and overall management of the various research institutes and laboratories that belong to the Headquarters Department.
- The Aviation Military Products Design Finalization Commission (hangkong jungong chanpin dingxing weiyuanhui) was established in Beijing in January 1962 with 16 members, and the Aviation Design Finalization Commission General Office (hangkong dingxing bangongshi/ hangdingban) was formed within the PLAAF's Scientific Research Department to handle the commission's daily affairs. The commission ceased working during the Cultural Revolution, but was revived in 1973. Today, the Aviation Design Finalization Office has 9 people.
- The Standardization Office (biaozhunhua bangongshi) has 8 people.

The TECHNICAL AREA within the Scientific Research Department includes the following divisions:

- The Aircraft and Engine Division (feiji fadongji chu) has 7 people.
- The Airborne Weapons and Equipment Division (jizai shebei wuqi chu) has 6 people.
- The Communications and Navigation Division (tongxin daohang chu) has 5 people.
- The Radar and Electronic Countermeasures Division (leida dianzi duikang chu) has 4 people.
- The Surface-to-Air Missile Division (dikong daodan chu) has 2 people and is responsible for SAMs and AAA.
- The Support Equipment Division (baozhang shebei chu) has 2 people.

The INFORMATION/DATA AREA consists of the Science and Technology Data Information Center (keji ziliao qingbao zhongxin). The Center, which has 21 people, is primarily responsible for collecting and assessing technical information on foreign weapon systems and managing the PLAAF's S&T information/intelligence program. Exhibitions and technical exchanges with foreigners also fall within the center's charter.

F-8-2 PROGRAM OFFICE

The F-8-2 Program Office (ba er gongcheng bangongshi/baerban) is a special organization established to manage the PLAAF's portion of the F-8-2 avionics modernization program (known as Peace Pearl in the U.S. and as the F-8-2 engineering program in China). The office is composed mostly of personnel from the Scientific Research Department, but also includes personnel from the Logistics and Aeronautical Engineering Departments. It has 15 people, including a director, two deputy directors and the following four groups:

- Plans Section (jihua zu)
- Technical Section (jishu zu)
- Logistics Section (houqin zu)
- Administrative Section (xingzheng zu)

COMMUNICATIONS DEPARTMENT

The Communications Department (tongxin bu/tongxin bing bu) is responsible for all communications policy and technical matters. There are at least four divisions.

- Radio Division (wuxiandian chu)
- Telephone Division (dianhua chu)
- Command, Control, and Communications (C3) Division (zhihui zidonghua chu)
- The Technical Support Division (jishu qinwu chu/jiqin chu) is responsible for technical matters.

TRAINING DEPARTMENT

The Training Department (junxun bu) is responsible for overseeing all training at the unit level, the flying academies, and the flight training portion of the Test Flight and Flying Training Center at Cangzhou Airfield. It is not responsible for training at other schools. The Training Department's Tactics Development Center (zhanshu fazhan zhongxin), which is located at the PLAAF Command College in Beijing, is responsible for developing campaign tactics, not individual fighter tactics. Individual tactics development is the responsibility of the Training Study Center at Cangzhou. The Training Department is also responsible for the Test Flight Regiment (shifei tuan) at Yanliang and its subordinate Test Flight Groups (shifei dadui) which are assigned to each aircraft factory. For example, the 1st Test Flight Group is at the Shenyang Aircraft Corporation, and the 6th Test Flight Group is at the Shaanxi Aircraft Corporation. Throughout the PLAAF's history, the Training and Schools Departments have been combined into a single department and then split into separate departments several times. Within the Training Department, there are at least five divisions/offices.

- The Training Equipment Research Office (junxun qicai yanjiushi) works with a Training Equipment Factory (junxun qicai chang).
- Flight Safety Division (feixing anquan chu)
- Plans Division (jihua chu)
- Airborne Troops Division (kongjiang bing chu)
- Flying Academies Division (feixing xueyuan chu)

SCHOOLS DEPARTMENT

The Schools Department (junxiao bu) is responsible for the planning, budget, regulations, facilities, administration, students, and staff to perform a particular type of training at the PLAAF's schools/academies. The other departments help determine the curriculum and provide the instructors to the Schools Department. PLAAF academies, except for flying academies, are responsible for recruiting students the same way civilian universities do. Prospective students must pass the national entrance examination before they are considered for the academies. The Schools Department does not provide regulations for standardization of visual/training aids or for computer systems at the schools. Even within individual schools, there is no standardization of computer systems. There are at least two divisions.

- Plans Division (jihua chu)
- Ground Schools Division (dimian xuexiao chu)

MILITARY AFFAIRS DEPARTMENT

The Military Affairs Department (junwu bu) manages general Air Force affairs, structure and organization, and pilot and enlisted recruiting. Actual Air Force recruiting, however, is handled by the provincial military commands, and the recruiters wear army uniforms. Except for the flying academies, all officer academies are responsible for recruiting their own cadets. There are at least two divisions/offices.

- Pilots Division (feixingyuan chu)
- The Pilot Recruiting Office (zhaofeiban/zhaoshou feixingyuan bangongshi) is responsible for setting the requirements and issuing the call for flying academy cadets. Each MRAF also has a Pilot Recruiting Office. Although the Army does the actual recruiting, the Pilot Recruiting Offices work closely with them. (See Section 21)

EQUIPMENT DEPARTMENT

The Equipment Department (zhuangbei bu) decides how much and what types of items the PLAAF should procure. This department works closely with the Aviation Equipment Division (hangkong zhuangbei chu) within the General Staff Department's Equipment Department. There are three primary departments within the PLAAF who are responsible for equipment -- the Scientific Research Department is responsible for R&D; the Equipment Department decides how many and when to buy the equipment and is responsible for general management of the equipment; and the Procurement Department buys the equipment. Poly Technologies, Inc. (Baoli Keji Youxian Gongsi/Baoli Gongsi) Aviation Division (hangkong

bu)* is also subordinate to the Air Force Equipment Department, and is responsible for selling PLAAF aviation equipment abroad that is still in service or is retired from the active inventory. There are at least seven divisions.

- The Excess Equipment Management Division (bianyu zhuangbei guanli chu) is responsible for equipment in the Air Force inventory that is excess or is no longer operational.
- The Foreign Assistance Division (yuanwai chu) is responsible for foreign military sales.
- The Finance Division (caiwu chu) is responsible for finance matters within the Equipment Department.
- The Aviation Division (hangkong chu) is responsible for all aircraft.
- The Ground Equipment Division (dimian zhuangbei chu) is responsible for vehicles such as trucks and jeeps.
- The Plans Division (jihua chu) is responsible for all the plans.
- The Administrative Division (guanli chu) distributes equipment according to requirements in the field. The five officers in this division are responsible for aircraft, vehicles, radar, SAM/AAA, and communications.

RADAR DEPARTMENT

The Radar Department (leida bu/leida bing bu) is responsible for writing the regulations and determining the organization and deployment of the radar troops. It is also responsible for all technical matters pertaining to radars, while the Operations Department is responsible for radar employment. There is at least one division.

- The Technical Support Division (jishu qinwu chu/jiqin chu) is responsible for radar technical matters.

* Poly Technologies is the import-export arm of the General Staff Department as part of the Equipment Department (zhuangbei bu). Whereas the various ministries sell new weapons and equipment, Poly Technologies' charter allows them to sell equipment that is already in the PLA's inventory. In the case of the Aviation Division, Poly Technologies uses "bu" as a "division" rather than a "department."

ANTIAIRCRAFT ARTILLERY DEPARTMENT

The Antiaircraft Artillery Department (gaopao bu) is responsible for antiaircraft artillery and surface-to-air missile administrative and maintenance matters. The Operations Department is responsible for operational matters. Based on historical and security reasons, AAA troops are sometimes referred to as yipao, and SAM troops are referred to as erpaq. There are at least three divisions.

- Antiaircraft Artillery Division (gaopao chu)
- Surface-to-Air Missile Division (dikong daodan chu)
- The Technical Support Division (jishu qinwu chu/jiqin chu) is responsible for all AAA and SAM technical matters.

ADMINISTRATIVE BUREAU

The Administrative Bureau (xingzheng guanli ju/guanli ju) is in charge of housing, food, and transportation support (basically all logistics support) for HqAF. The Logistics Department handles these affairs for the rest of the Air Force. The Administrative Bureau also runs the PLAAF hotel in Beijing. In addition, this bureau is responsible for providing the personnel to the Political Department as security forces for HqAF. The security forces, such as gate guards and those who deal with vehicle accidents, are organized into a company (lian dui). There are at least two divisions.

- Finance Division (caiwu chu)
- The Retired Cadre Division (lao ganbu chu) is responsible for running the Headquarters Department's sanatoriums (ganxiusuo) and is now manned by civil service personnel.

AIR TRAFFIC CONTROL BUREAU

The original basis for air traffic control was the need to maintain air procedures (kongzhong zhixu) and to support flight safety. In the beginning, an Air Traffic Control Division (hangxing chu) and an Aircraft Dispatch Office (hangxing diaodu shi) were set up within the HqAF Headquarters Department, as well as at each MRAF and Air Corps Headquarters. An Aircraft Dispatch Office was also set up at each aviation unit and flying school airfield. The HqAF Air Traffic Control Division became the Air Traffic Control Bureau (hangxing ju) in 1963. Today, the Air Traffic Control Bureau has 30 personnel assigned and is responsible for all aircraft matters from take-off to landing, including flight routes. The bureau does not control anything that has to do with ground support. The 34th Transport Division (Xijiao, Nanyuan, and Shahezhen airfields) and the PLAAF's China

United Airlines are HqAF directly subordinate units (zhishu budui) and are operationally subordinate to the Air Traffic Control Bureau. There is no flight safety division. There are at least three divisions/offices.

- Flight Control Office (feixing guanzhi shi)
- Air Traffic Control Division (hangxing chu)
- Technical Division (jishu chu)

NAVIGATION DEPARTMENT

The Navigation Department (linghang bu) originated during the early days of the PLAAF, when transports each had two navigators. This department was responsible for all navigator-related matters, such as writing the regulations and policies, and working with the Air Traffic Control Bureau to design flight routes. At the aviation unit level, the Navigation Division (linghang chu) is responsible for items such as Notices to Airmen (NOTAMs) and for filing and checking flight plans. The primary missions of the navigation system is to organize and implement air navigation, bombing, and ground controlled intercept (dimian zihui yindao). Air navigation and bombing primarily uses on-board navigation equipment. PLAAF aviation units have specialized navigation personnel as follows:

- Bomber and transport divisions, regiments, and groups have a navigation director (linghang zhuren)
- Bomber and transport squadrons have a navigation chief (linghang zhang)
- Bomber and transport flight crews have navigators (linghang yuan)
- Fighter and ground attack units only have a division and regiment navigation director

The Navigation Department also works closely with the Schools Department to administer the Navigation Academy (linghang xueyuan), which was established in 1958 as the 16th Aviation School (hangxiao) in Huxian, Shaanxi Province. This academy trains navigators, air traffic controllers, and weapons controllers. The Navigation Department has at least two subordinate divisions:

- Navigation Division (linghang chu)
- Weapons Controller Division (yindac chu)

WEATHER BUREAU

The Weather Bureau (qixiang ju) has weather centers located throughout China, including one at Xijiao airfield in Beijing. This bureau is responsible for writing all the regulations pertaining to weather support and for organizing the weather support network.

CONFIDENTIAL BUREAU

The Confidential Bureau (jiyao ju) is responsible for encoding and decoding messages for electrical transmission.

DIRECTLY SUBORDINATE SUPPLY DEPARTMENT

The Directly Subordinate Supply Department (zhishu gongying bu/zhigong bu) is responsible for food services and support to the Headquarters Department, and possibly to the Political and Aeronautical Engineering Departments (the Logistics Department is located in a separate compound). The first reference to this department was seen in early 1989, and may be a new department. As such, it has probably taken over some of the support functions of the Administrative Bureau.

COMMAND POST

There is a Command Post (zihuisuo), which is best translated as an operations centers, at HqAF, each MRAF Headquarters, each Air Corps, each Command Post (zihuisuo, such as the Dalian Command Post), and each operational aviation, AAA, SAM, and radar unit down to the regiment level. The operations center, which is separate from the administrative operations department/division, is part of the Headquarters Department and comes under the chief of staff. There are approximately 50 people who work full time in the operations center, and one of the deputy commanders or deputy chiefs of staff is the duty officer on a rotational basis. The 50 people include at least one representative from each of the second-level administrative departments within the four first-level departments.

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SECTION 6

HEADQUARTERS AIR FORCE, POLITICAL DEPARTMENT

The Political Department (zhengzhi bu/kongzheng) is responsible for ideology and political work, MWR (morale, welfare, and recreation), Party organization, cultural education, mass work, and teaching patriotism, as well as being responsible for officer appointments, promotions, and removal. The Political Department has a director (zhuren/Maj Gen), two deputy directors (Maj Gen), and at least twelve second level departments/divisions/offices.

GENERAL OFFICE

The General Office (bangongshi) is responsible for reviewing all paperwork going to the director and deputy directors. It has four divisions/offices.

- The Secretariat Division (mishu chu) is responsible for screening all paperwork going to the director and ~~the~~ deputy directors.

- The Administrative Division (guanli chu) is responsible for services, the budget, and logistics support to the Political Department.

- The Letters of Inquiry Division (xinfang chu) is responsible for receiving and responding to letters of complaint and inquiry, much the same as a USAF Inspector General's Office does.

- The Political Research Office (zhengzhi yanjiushi/zhengyanshi) is responsible for studying problems and writing up the necessary reports.

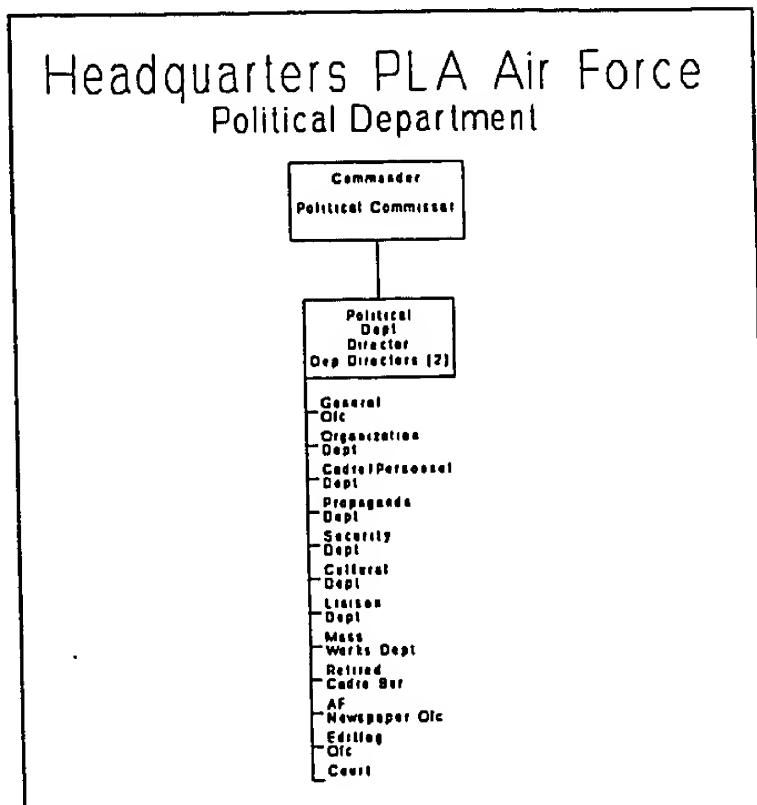


Figure 1

ORGANIZATION DEPARTMENT

The Organization Department (zuzhi bu) is primarily responsible for Party affairs and has three subordinate divisions.

- The Party Committee Division (dangwei chu) is responsible for the daily affairs of the PLAAF Party Committee.
- The Youth Division (nianqing chu) is responsible for all youth activities.
- The Organization Division (zuzhi chu) is responsible for statistics, awards, survivor benefits, women's affairs, and outstanding officer recognition.

CADRE/PERSONNEL DEPARTMENT

The Cadre/Personnel Department (ganbu bu) manages appointments, promotions, demotions, and all personnel matters. It has four divisions.

- The Appointment and Removal Division (renmian chu) is responsible for appointment, removal, and promotions.
- The Ranks Division (junxian chu) was established to work on the 1988 introduction of ranks in the PLAAF. This division may eventually be abolished.
- The Transfer Division (tiaopei chu) is responsible for selection, assignments, and transfers.
- The Science and Technology Division (keji chu) is responsible for schools, health, and technical matters. It works with the Schools Division (yuanxiao chu) in the General Political Department's Cadre/Personnel Department (ganbu bu).

PROPAGANDA DEPARTMENT

The Propaganda Department (xuanchuan bu) is in charge of propaganda, ideology, and mobilization, as well as internal PLAAF information and publications. It has three divisions.

- The Propaganda Division (xuanchuan chu) writes news articles.

- The Education Division (jiaoyu chu) is responsible for ideology and education. It has at least one section.

- Audio-Visual Education Section (dianhua jiaoyu zu).

- The Cultural Education Division (wenhua jiaoyu chu) is responsible for Cultural Education.

SECURITY DEPARTMENT

The Security Department (baowei bu) manages all security matters, including security for VIPs. At the base level, it is called the Security Office (jingwei ke), and is responsible for base security. There is no security police (kongjun jingcha) organization like in the USAF. At the base level, the gate guards belong to the base security unit (jingwei budui), which in turn belongs to the unit's Political Department. For example, at an airfield the Security Guard Flight (fendui) is divided into inner (neichang) and outer (waichang) security guards. The inner guards are responsible for barracks areas and barracks doors, while the outer guards are responsible for aircraft, airfield equipment security and maintaining airfield order. The Security Department has three Divisions.

- The Security Division (baowei chu) is responsible for ground security at PLAAF units. Personnel at HqAF who man the gates are from the Headquarters Department's Administrative Bureau, but they are responsible to the Security Division. The Security Division has a Prisoner Guard Unit (kanshou suo) which has a martial arts (wushu dui) team that competes throughout China.
- The Pilot Support Division (kongqin chu) is responsible for pilot security.
- The VIP Security Division (jingwei chu) is responsible for PLAAF and foreign VIPs.

CULTURAL DEPARTMENT

The Cultural Department (wenhua bu) is in charge of cultural education and recreational affairs. It has three subordinate elements.

- The PLAAF Political Works Troupe (kongzheng wengong tuan), which is also known as the Song & Dance Troupe (kongjun gewu tuan), is a directly subordinate unit (zhishu budui). The troupe performs throughout China and sent a 50-member group to the United States to perform at the USAF MAJCOMs in 1986.

- The HqAF Women's Basketball Team (nuzi lanqiu dui) is a directly subordinate unit. They competed in North Korea in October 1988.
- The HqAF Men's Basketball Team (nanzi lanqiu dui) is a directly subordinate unit.

LIAISON DEPARTMENT

The Liaison Department (lianluo bu) is responsible for studying relations with Taiwan, and for enemy propaganda and interrogation. There are no divisions.

MASS WORKS DEPARTMENT

The Mass Works Department (qungong bu) has one subordinate Division.

- The Mass Works Division (qungong chu) is responsible for PLAAF relations with the government and local people. It helps resolve issues such as land disputes and incidents between the local populace and PLAAF members.

RETIRED CADRE BUREAU

The Retired Cadre Bureau (lao ganbu ju) is a new department and is responsible for all of the retired officer's affairs. With the demobilization and retirement programs that began in 1985, this department has the responsibility of finding jobs and housing for some of these people, especially those who joined the PLA prior to 1949. There are two retired divisions, based upon the date the PLAAF member joined the military.

- The Retired Division (lixiu chu) is responsible for cadres who joined the military prior to 1 October 1949. These cadres receive 100 percent of their active duty salary and are entitled to live in a retired cadre sanitorium (ganxiusuo).

- The Retired Division (tuixiu chu) is responsible for cadres who joined the military after 1 October 1949. They receive 80-90 percent of their active duty salary but are not entitled to live in a ganxiusuo. This division helps them find housing and possibly another job.

AIR FORCE NEWSPAPER OFFICE

The Air Force Newspaper Office (kongjun baoshe) is responsible for the Air Force Newspaper (Kongjun Bao) which is published three times per week. There is an Editorial Office (bianji bu). Some people also work on the Air Force (Zhongguo Kongjun) Magazine.

EDITING OFFICE

The Editing Office (bianshen shi) helps older cadres write their biographies.

COURT

The Court (fayuan) tries offenders who have been accused of a crime or wrong doing. This office works closely with the Procuratorate and Discipline Inspection Commission. The court is staffed primarily with people who received training within the political system.

SECTION 7

HEADQUARTERS AIR FORCE, LOGISTICS DEPARTMENT

The Logistics Department (houqin bu/kongzhou) was established in November 1949, and was based on the Fourth Field Army's 6th department. The Logistics Department is responsible for supply, as well as support for operations, training, and living. Unlike the three other first level departments, the Logistics Department's command staff includes a director (Maj Gen), political commissar (Maj Gen), two deputy directors (Maj Gen), a chief of staff (Maj Gen), and two deputy chiefs of staff (Sr Col). The headquarters for the Logistics Department is the only one of the four first level departments which is not located within the HqAF compound.

The Logistics Department has at least seventeen second level departments/ bureaus. It is also responsible for various research institutes and units, the Air Force general hospital and subordinate hospitals, the four stations equipment repair factories, and all air materiel depots. In 1985 HqAF established a new office, which was called the HqAF Logistics Department Wuhan Office (kongjun houqin bu Wuhan banshichu), whose mission was to manage PLAAF factories and enterprises in that region.

The Logistics Department's basic mission is to provide supplies for PLAAF construction, operations, training, and daily life. It carries out these primary missions in the following ways:

- Deploys logistics forces
- Handles logistics mobilization work
- Provides procurement, allocation, acceptance

testing, storage and care, maintenance and repair, transportation, and supply of AAA, SAMs, ammunition, radars, vehicles, and boats

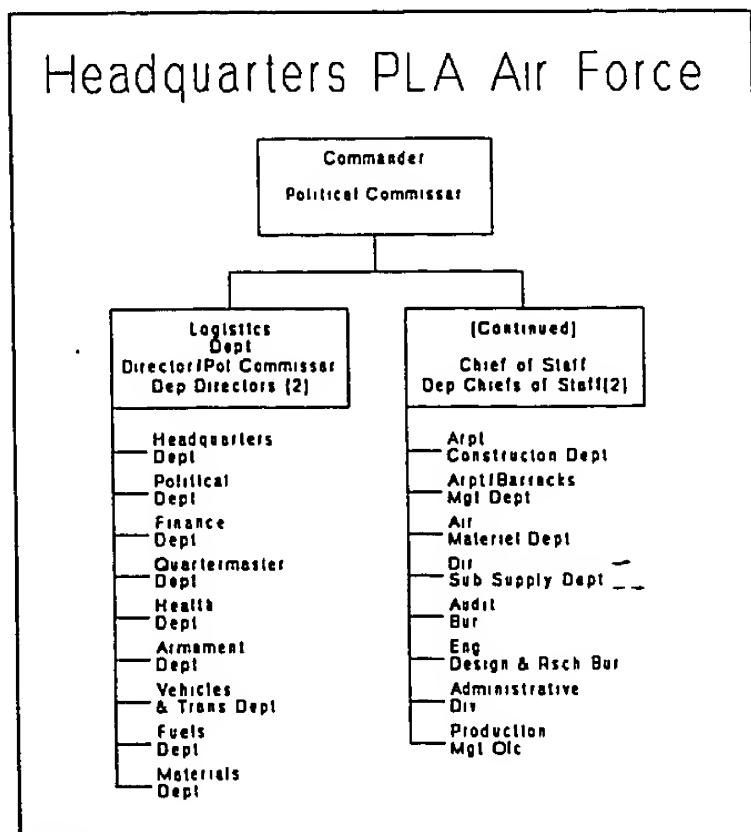


Figure 1

- Provides logistics training and education
- Provides logistics management work
- Manages logistics equipment

2. The Logistics Department's responsibilities for depot management include the following:

- Improve storage techniques
- Implement moistureproof measures
- Implement safe protection and disposal measures
- Formulate regulations for receipt and issue
- Write regulations for warehouse personnel
- Select warehouse personnel for school
- Conduct on-the-job training (OJT) at the depot
- Enhance mechanization and automation
- Purchase complete sets of some machinery
- Allocate microcomputers for management
- Build some automated management warehouses that are equipped with elevated cubes.

3. Officers are trained on three levels -- basic (chiji), intermediate (zhongji), and advanced (gaoji). Beginning in the 1950s, two schools and fifteen logistics specialty training regiments/units were created, but these were severely affected during the Cultural Revolution. Today, basic training is conducted at the PLAAF Logistics Academy (kongjun qinwu xueyuan) in Xuzhou, Jiangsu Province, for each of the specialties except medical. The PLAAF has its own Medical School (kongjun yixue zhuanke xuexiao/kongyixiao) in Jilin, Jilin Province. Intermediate training is conducted at the PLAAF Command College (kongjun zhihui xueyuan) in Beijing, and the General Logistics Department (GLD) provides advanced training at the Logistics Academy (houqin xueyuan) in Beijing.

New enlisted logistics personnel receive training at one of several logistics training regiments (houqin xunlian zhuanye tuan), which are mostly independent regiments (duli tuan).

Most of these regiments have several specialties, while some have only one or two. The size, scope, and number of the training regiments depends upon the specialty and the total number of PLAAF personnel who need that particular type of training. For example, there are more regiments for larger specialty fields, such as transportation or medical. Enlisted medical training is eight months long and transportation training is nine months. NCOs receive advanced training at Training Groups (xunlian dadui). For example, there is a radar training group in the Lanzhou MRAF. The PLAAF also has Training Regiments for specialized logistics troops (zhuanye bing).

The Logistics Department is responsible for some equipment repair at vehicle repair factories (qiche xiuli chang), armament and radar repair factories (junxie leida xiuli chang), engineering equipment repair factories (gongcheng jixie xiuli chang), and aviation four stations repair factories (hangkong sizhan xiuli chang), all of which are subordinate to the Logistics Department. These repair factories are responsible for items such as vehicles, radar, armament, engineering equipment, and aircraft start vehicles and oxygen trucks.

HEADQUARTERS DEPARTMENT

The Headquarters Department (siling bu) is responsible for the functional control, including the budget, plans, and regulations, for all of the research institutes that belong to the Logistics Department. In the 1950s and 1960s, the Logistics Department established the Medical and Fuels Research Institutes. After the third plenum of the 11th Party Congress, research institutes such as those for capital construction, aviation munitions, and surface-to-air missiles were established. In addition, the Headquarters Department is like the General Office (bangongshi) within the other three first level departments, in that all of the staff actions from the other second level departments within the Logistics Department must first go through the Headquarters Department before reaching the director. This department has at least three subordinate divisions/offices.

- The Science, Technology, and Equipment Division (keji zhuangbei chu) is responsible for logistics science and technology, and academic theory and research. It is also responsible for the budget, regulations, and assigning requirements to all of the research institutes within the Logistics Department.
- Translation Office (fanyi shi)
- Combat Support Division (zuozhan qinwu chu/zhangqin chu)

POLITICAL DEPARTMENT

The Political Department (zhengzhi bu) is responsible for all logistics personnel, propaganda, and political matters.

FINANCE DEPARTMENT

The Finance Department (caiwu bu) requests the PLAAF's funding, allocates the funds and budget, formulates the standardization system for logistics special use funds, and performs financial accounting. There is at least one division.

- Accounting Division (kuaiji chu)

Logistics funds are arranged by balancing income and expenditures, proceeding with authority, ensuring that the focal points (zhongdian) in the five year plan are met, and abiding by general principles. Basically, the GLD allocates two types of money to the PLAAF annually. One type is allocated to the Headquarters Department's Equipment Department for equipment purchases. The second type is allocated to the Aeronautical Engineering Department and Logistics Department for maintenance and spare parts, respectively.

QUARTERMASTER DEPARTMENT

The Quartermaster Department (junxu bu) takes charge of quartermaster work by organizing planning, supply, and management of provisions and clothing. It is also responsible for quartermaster research. It has at least one division.

- Clothing Division (beizhuang chu)

HEALTH DEPARTMENT

The Health Department (weisheng bu) is responsible for three key areas: organizing epidemic prevention, aviation health, and medical aid; family planning; supplying and managing medicine and medical equipment; and writing the regulations on all health matters. It is also responsible for all the PLAAF hospitals, the ten liaoyangyuan (pilot sanatoriums), the Medical School in Jilin, the administrative control of the Fourth (Aviation Medicine) Research Institute, and the health units down to the lowest level. There is at least one division.

- Health Services Division (weisheng qinwu chu)

The Logistics Department has four levels of health facilities as shown below, and each flying regiment (feixing tuan) has several flight surgeons assigned to a flight surgeon section:

- Headquarters PLAAF general hospital (zong yiyuan)
- A central hospital at each MRAF Headquarters level

- A clinic (menzhenbu) at each unit headquarters
- A Health Office or Team (weisheng ke/weisheng dui) at each unit's basic element

Each pilot also has 30 days per year of convalescence at one of the following ten PLAAF sanatoriums (liaoyangyuan):

<u>City</u>	<u>Province</u>	<u>MRAF</u>
Xingcheng	Liaoning	Shenyang
Dalian	Liaoning	Shenyang
Beidaihe	Hebei	Beijing
Xian, Lintong	Shaanxi	Lanzhou
Hangzhou	Zhejiang	Nanjing
Jiujiang, Lushan	Jiangxi	Nanjing
Guilin	Guangxi	Guangzhou
Wuhan, Donghu	Hubei	Guangzhou
Qingdao	Shandong	Jinan
Chengdu, Guanxian	Sichuan	Chengdu

ARMAMENT DEPARTMENT

The Armament Department (junxie bu) has a director, one deputy director, and 35 personnel assigned in the five divisions listed below:

- Plans and Finance Division (jihua caiwu chu)
- Aviation Munitions Division (hangkong danyao chu) is responsible for bombs, air-to-air missiles, and rockets.
- The Avionics/Electronics Division (dianzi chu) is responsible for computers.
- Radar Division (leida chu)
- The Surface-to-Air Missile Division (dikong daodan chu) is responsible for SAM and AAA production.

TRANSPORTATION DEPARTMENT

The Transportation Department (*yunshu bu*) is responsible for maintenance and management of military transportation, vehicles, boats, and special rail lines and roads. It coordinates the PLAAF's monthly, quarterly, and annual rail transportation requirements with the GLD for shipping what amounts to almost all of the PLAAF's supplies throughout China. This department also has vehicle battalions, car repair facilities, and PLAAF boat troops (*chuanting budui*). The boat troops are stationed along the Yangzi river and the coast for supplying fuel to air bases.

FUELS DEPARTMENT

The Fuels Department (*youliaobu*) is responsible for procurement, storage, supply, and management of fuel and fuel equipment.

MATERIALS DEPARTMENT

The Materials Department (*wuzibu*) is responsible for application, allocation, supply, management, and storage of all materials, excluding air materiel. The PLAAF has three types of materials as follows:

- Common use material (*tongyong wuzi*) for PLAAF units is based on the GLD's unified plan, procurement, and supply. The GLD allocates a fixed amount of money

to the PLAAF Logistics Department which can only be used to purchase a specified amount and type of common use material. For example, if "X" amount of money has been allocated to buy ten aircraft, then this money cannot be used to buy eight aircraft and five radar systems.

- Specialized material (*zhuanyong wuzi*) for PLAAF units is organized and procured by HqAF. The GLD allocates some money to the PLAAF Logistics Department for this specialized material, and the PLAAF can decide itself how to use this money to

~~buy material from within the PLAAF.~~

- Local materials needed by units can be purchased directly from the market from unit funds.

AIRFIELD CONSTRUCTION DEPARTMENT

The Airfield Construction Department (*xiujian bu*) is primarily responsible for airfield runway construction.

AIRFIELD AND BARRACK MANAGEMENT DEPARTMENT

The Airfield and Barracks Management Department (jichang yingfang guanli bu/jiying bu) is responsible for airfield command shelter engineering, barracks management, design and construction of airports, battlefield shelters, cave warehouses, warehouses, fuel depots, factories, and housing, as well as daily maintenance of the housing area and base facilities. It has at least one division.

- The Environment and Greening Division (huanjing luhua chu) is responsible for planting trees and environmental affairs.

AIR MATERIEL DEPARTMENT

The Air Materiel Department (hangkong cailiao bu/hangcai bu) has a director, one deputy director, and 30 personnel assigned to six divisions to manage procurement, storage, and supply of air materiel, and to organize the management and four stations services support for retired aviation equipment. The difference between the Materials Department and the Air Materiel Department is that the former is responsible for items such as lumber and concrete for the entire PLAAF, and the latter is responsible only for aircraft and aircraft support equipment for aviation troops. It is not responsible for radar, communications, airborne, SAM, or AAA troops. Unlike most of the other PLAAF logistics second level departments, the air materiel department does not have a counterpart organization within GLD, and is therefore not responsible to any specific GLD department.

Supply depots are organized on a three tier structure -- first level (yiji) depots are located in various military regions but are subordinate to HqAF; second level (erji) depots are located in each military region and are subordinate to the MRAF Headquarters; and third level (sanji) depots are located at and subordinate to operational units. For example, each aviation division/ airfield has a third level depot, and the second level depots can support the third level depots in time of need. In addition, first level depots can either supply the second level depots or send items directly to the unit if necessary. The PLAAF's first level air materiel depots are directly subordinate to the Logistics Department Headquarters, but are functionally (yewu) responsible to the Plans Division within the Air Materiel Department. The Air Materiel Department's six divisions are listed below:

- Plans Division (jihua chu)
- Finance Division (caiwu chu)
- Avionics Division (hangkong dianzi chu)
- Aircraft and Engine Division (feiji fadongji chu)

- Ground Equipment Division (dimian shebei chu)
- Four Stations Division (sizhan chu)

DIRECTLY SUBORDINATE SUPPLY DEPARTMENT

The Directly Subordinate Supply Department (zhishu gongying bu/zhigong bu) is responsible for logistics support to HqAF only. It works closely with the Administrative Bureau/Divisions within HqAF. Since the institution of the PLA's civil service program in 1988, this department has also been responsible for logistics support to the HqAF's civil service personnel. There is no equivalent at the MRAF Headquarters, Air Corps, Command Post, or division/base level, but each Military Region Logistics Department has a Directly Subordinate Supply Department that performs the same functions.

AUDIT BUREAU

The Audit Bureau (shenji ju) performs audits and inspections to determine how money is being used.

ENGINEERING DESIGN AND RESEARCH BUREAU

In July 1962, the HqAF Logistics Department established an Engineering Design Bureau (kongjun gongcheng sheji ju), which is known today as the Engineering Design and Research Bureau (gongcheng sheji yanjiu ju), and each MRAF Logistics Department established an Engineering Design Office (sheji shi). When they were established, they were responsible for designing defense construction projects. Today, the bureau also designs engineering equipment such as frequency detectors and processors, and has a subordinate factory assigned to it. When the PLA implemented its civil service (wenzhi ganbu) system in August 1988, the bureau converted 132 personnel (almost everyone), to civil servants. In addition, the bureau has its own Party Committee (dangwei).

ADMINISTRATIVE DIVISION

The Administrative Division (guanli chu) has the same role as the Administrative Division in the Political and Aeronautical Engineering Departments and works closely with the first level Headquarters Department's Administrative Bureau, and the Logistics Department's Directly Subordinate Supply Department.

PRODUCTION MANAGEMENT OFFICE

The Production Management Office (shengchan jingying bangongshi) guides production management work within the PLAAF's units, and is responsible for thousands of small businesses/enterprises (qiye) which the PLAAF has established to make money. For example, Air Corps and above are in charge of farms, while most airfield supply stations (changzhān), ground brigades, and ground regiments have established non-staple food bases. The large-type production bases near Beijing at Tongxian, Sanhe, and Caojiawu produced 4000 pigs, 2000 suckling pigs, and 200,000 chickens in 1988. Some products are also sold in Hong Kong and Macao.

The PLAAF has not stated how many enterprises are run by budui's. In 1989, however, it reported that more than 100 PLAAF enterprises earned profits in excess of RMB \$50,000 while several earned more than RMB \$1 million.

SECTION 8

HEADQUARTERS AIR FORCE, AERONAUTICAL ENGINEERING DEPARTMENT

When the PLAAF was founded in November 1949, an Air Force Engineering Department (kongjun gongcheng bu) was established to manage aircraft maintenance, and the PLAAF's Engineering College in Xian was established in September 1964. In September 1969, the Engineering Department was abolished and its Field Maintenance Department (waichang bu) was subordinated to the Headquarters Department as the Aircraft Maintenance Department (jiwu bu). However, due to the problems encountered with aircraft maintenance, the current Aeronautical Engineering Department (hangkong gongcheng bu/konggong) was established as a first level department on 1 May 1976.

The Aeronautical Engineering Department has a director (Maj Gen) and two deputy directors (Maj Gen). One deputy director is responsible for the Field Maintenance and Procurement Departments, and the other deputy director is responsible for the Factory Management Department, Political Department, and the General Office.

Whereas the PLAAF's Headquarters, Political, and Logistics Departments each have a higher level PLA department (GSD, GPD, and GLD) the Aeronautical Engineering Department does not have an equivalent higher level general department. However, it works closely with the GLD and the GSD's Equipment Department.

The Aeronautical Engineering Department is responsible for the following missions:

- All aircraft and engine maintenance, repair, and procurement

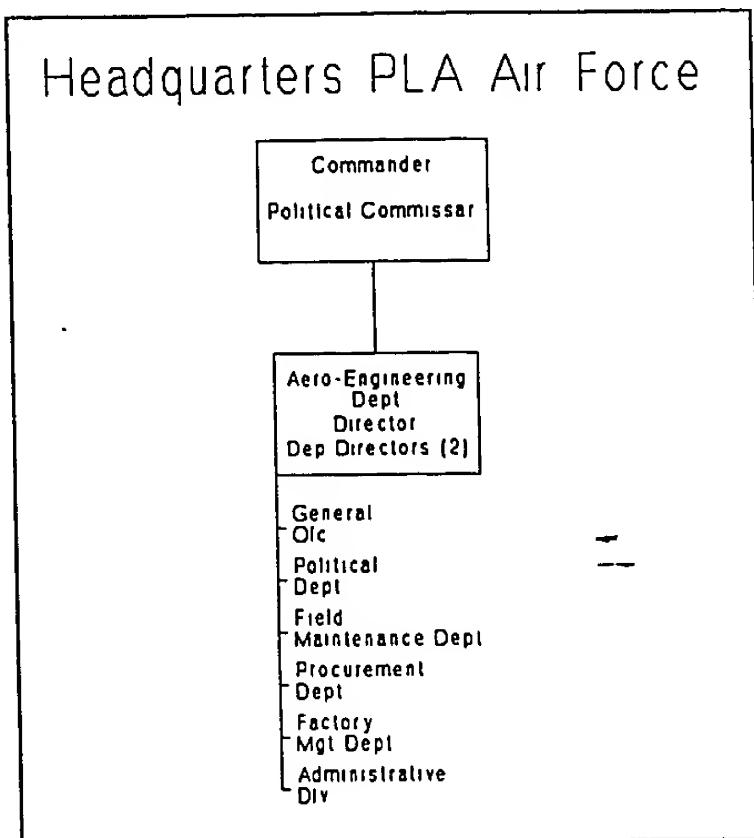


Figure 1

- Aviation maintenance/repair research at two research institutes
- Aviation maintenance/repair regulations
- Aircraft ground support equipment

The Logistics Department, not the Aeronautical Engineering Department, is responsible for maintenance of equipment belonging to AAA, SAM, radar, communications, and airborne troops/units. Although the Aeronautical Engineering Department is not responsible for SAMs or AAA maintenance, it is responsible for air-to-air missiles. Aircraft and engine maintenance is carried out at three levels as follow:

- Aviation Repair Factories (hangkong xiuli chang) are responsible for major overhaul (fanxiu). These factories are directly managed by either HqAF or by HqAF and the MRAF Headquarters together.
- Central Repair Factories (zhongxin xiuli chang) are responsible for major (daxiu) and intermediate (zhongxiu) repairs, and are managed by the MRAF Headquarters.
- Air Divisions and flying academies have Repair Factories (xiuli chang), which are responsible for intermediate and minor (xiaoxiu) repairs, and are managed by the Air Division or academy.

Maintenance personnel are trained in several ways, depending upon their rank (officer or enlisted). Officers are trained at the Aeronautical Engineering College (kongjun gongcheng xueyuan) in Xian, or at the two Maintenance Technical Training Schools (hangkong jishu zhuanye xuexiao/ hangzhuan xuexiao)-in Xinyang or Changchun. In the 1970s, three maintenance schools (hangkong xiuli gongcheng jigong xuexiao) were established in Jilin, Changsha, and Yanliang. From 1982-1985, these changed to Aviation Engineering Schools (hangkong gongcheng xuexiao), which trained intermediate level specialized staff and workers. In August 1986, eight Aviation Maintenance Training Regiments (hangkong jiwu xunlian tuan) were established to train new enlisted maintenance troops. The Aeronautical Engineering Department works closely with the Schools Department and provides the curriculum and instructors for these schools.

The Aeronautical Engineering Department has at least six second level departments/offices/divisions.

GENERAL OFFICE

The General Office (bangongshi) has at least two subordinate divisions/ offices. All of the staff actions from the other second level departments within the Aeronautical Engineering Department must first go through the General Office before reaching the director.

- Secretariat Division (mishu chu)

- Translation Office (fanyi shi)

POLITICAL DEPARTMENT

The Political Department (zhengzhi bu) is responsible for all personnel, propaganda, and political matters for the Aeronautical Engineering Department.

FIELD MAINTENANCE DEPARTMENT

The Field Maintenance Department (waichang bu) is responsible for all first and second level maintenance at the aviation division/base level, and works closely with the PLAAF First (Maintenance) Research Institute in Beijing. This department also has directly subordinate repair and spare part factories (xiupei chang) for second level maintenance in each Military Region. There are at least seven divisions and subordinate offices.

- Aircraft Division (feiji chu)

- Bomber Office (hongzha ke)

- Fighter and Ground Attack Office (qianqiang ke)

- Transport Office (yunshu ke)

- Helicopter Office (zhisheng ke)

- Aircraft Service Life and Reliability Office (feiji dingshou he kekaoxing bangongshi)

- Plans Division (jihua chu)

- Avionics Division (dianzi chu)

- Armament Division (junxie chu)

- Quality Control and Safety Division (zhiliang anquan chu/zhian chu)
- Special Equipment Division (teshe chu)
- Training Division (xunlian chu)

PROCUREMENT DEPARTMENT

The Procurement Department (dinghuo bu) procures all PLAAF aviation equipment from domestic and foreign suppliers and, like the USAF AFPRO system, is responsible for all factory and MRAF procurement representatives (the Scientific Research Department also has some plant representatives). It has at least two subordinate divisions/offices.

- Training Division (xunlian chu)
- An A-5 Program Office (qiang wu gongcheng bangongshi), which is similar to the F-8-2 Program Office, supports the integration of the French CSF Thomson avionics equipment into PLAAF's A-5s (designated the A-5K) at the PLAAF's Hangzhou Jianqiao airfield.

FACTORY MANAGEMENT DEPARTMENT

The Factory Management Department (gongchang guanli bu/gongguan bu) is responsible for all aircraft and engine depot level repairs and major modifications, and works closely with the Repair Research Institute in Nanjing. The department has several distribution warehouses located throughout China (such as Beijing, Dalian, and Shanghai), where items like engines are sent after being repaired. The equipment is then returned directly to a unit or given to the Logistics Department's supply depots for distribution. The Factory Management Department has at least six subordinate divisions.

- Technical Division (jishu chu)
- Production Planning Division (shengchan jihua chu)
- Finance Division (caiwu chu)
- Quality Control Division (zhiliang chu)
- Air Materiel Division (hangcai chu)
- Training Division (xunlian chu)

The Factory Management Department has 21 repair factories which employ 40,000 workers, all of whom are civilians. All of the factories are under the factory management responsibility system, which increases the autonomy of the factory managers, reduces emphasis on planned quotas, and allows the factories to produce goods outside the plan for sale on the market. The factories are also allowed to retain some of the profit for reinvestment and for worker bonuses.

Each factory has a public name, a two digit PLAAF designator, and a four digit General Logistics Department designator. Most, if not all, of the factories are located near a PLAAF airfield.

Between 1955-1959, the PLAAF took over the Bureau of Aviation Industry's (hangkong gongye ju) 411, 521, and 531 Factories, which later became the 5701, 5703, and 5704 Factories. In April 1955, the PLAAF also took over the Soviet Air Force's Aviation Repair Factory in Luda, which later became the 5706 Factory. The Shenyang MRAF's Special Equipment Repair Factory (tezhong shebei xiuli chang), which later became the 5705 Factory, changed to HqAF management. An Armament Factory was formed in Nanjing, which later became the 5311 Factory. This particular factory designed the aiming system for the A-5 in 1970.

After 1955, the Guangzhou, Beijing, and Lanzhou MRAF Central Repair Factories were modified or expanded as overhaul factories, and were named the 5718, 5721, and 5722 factories, respectively. In addition, the Air Corps' Major Repair Points (daxiu dian) were merged into the 5714 and 5706 aircraft repair factories.

In 1960, the 5702 Factory was built. Beginning in 1965, the 5707, 5708, 5710, 5711, 5712, 5713, 5715, 5716, 5719, and 5720 aircraft, engine, and radio repair factories were built.

In order to provide timely supply of equipment and materials for the factories, equipment warehouses and supply depots were also build in Shanghai, Luoyang, Chengdu, and Beijing.

A list of the Factory Management Department's factories, including their GLD designator, location (city and province), and name(s) (English and Chinese) is shown below (some factories have more than one name and some of the identifiers for the factories are not known):

<u>Designator</u>	<u>Location</u>
<u>Name</u>	

5701	Chengdu, Sichuan Jinjiang Aircraft & Engine Overhaul Factory/Xiongying Machinery Factory (Jinjiang jiqi chang/Xiongying jixie chang)
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- 5702 Wugong, Shaanxi
Xichuan Aircraft & Engine Overhaul Factory (Xichuan jixie chang)
- 5703 Shanghai
Shanghai Aircraft Factory (Shanghai feiji zhizao chang)
- 5704² Jilin, Jilin
Shuangji Aircraft & Engine Overhaul Factory (Shuangji jixie chang)
- 5705 Shenyang, Liaoning
Songliao Aeronautical Instrument, Electrical, Radio & Radar Overhaul Factory
(Songliao dianzi yiqi chang)
- 5706 Dalian, Liaoning
Changfeng Aircraft & Engine Overhaul Factory (Changfeng jixie chang)
- 5710 Liuhe, Jilin
Liuhe Aircraft & Engine Overhaul Factory (Liuhe jixie chang/Longgang jixie chang)
- 5712/5714 Wuhan, Hubei
Lingyun Aircraft Overhaul Factory (Lingyun jixie chang)
- 5713 Gucheng, Hubei
Shijing Aero-Engine Overhaul Factory (Shijing jixie chang)
- 5715 Nanjing, Jiangsu
Jinling Optical Instruments Factory (Jinling guangxue yiqi chang) (AKA 5311 Factory)
- 5716 Zunyi, Guizhou
Renjiang Machinery Factory (Renjiang jixie chang)
- 5718 Guiyang, Guizhou
Changhong Aircraft Overhaul Factory (Changhong jixie chang)
- 5720 Wuhu, Anhui
Wuhu Aircraft Overhaul Factory (Wuhu jixie chang)
- 5721 Huoqiu, Hebei
Haishan Aircraft Overhaul Factory (Haishan jixie chang)
- 5722 Tianshui, Gansu
Lantian Machinery Factory (Lantian jixie chang)

- Guiyang, Guizhou
Qianying Aircraft Overhaul Factory (Qianying jixie chang)
- Dangyang, Hubei
Xiongfeng Aircraft Overhaul Factory (Xiongfeng jixie chang)
- Changsha, Hunan
Changkong Aircraft & Engine Overhaul Factory (Changkong jixie chang)
- Luoyang, Henan
Dancheng Aeronautical Radar & Radio Overhaul Factory (Dancheng wuxiandian chang)
- Jincheng, Shanxi
Jinxiang Aero-Engine Overhaul Factory (Jinxiang jixie chang)
- Pengxian, Sichuan
Chuanxi Aero-Engine Overhaul Factory (Chuanxi jiqi chang)
- Shenyang, Liaoning
Xingguang Aeronautical & Industrial Gas Factory (Xingguang jixie chang)

The Factory Management Department is also represented as part of Poly Technologies Incorporated (Baoli Keji Youxian Gongsi/Baoli Gongsi), which is the General Staff Department's import/export arm. In 1984 the China Dongfang Aircraft Support Corporation, which in reality is the Factory Management Department and its 21 factories, was established and then changed its name to Poly Technologies Incorporated Aircraft Support Division (PASD). In 1988 PASD and the nine major Chinese state-owned aviation overhaul and repair factories jointly founded Poly Aircraft Support Incorporated (PASI). According to the May 1988 issue of Hangkong Zhishi (Aerospace Knowledge), PASI/PASD has relations with 30 countries and regions. In the past few years, PASI/PASD had overhauled over 200 aircraft and 2,000 engines for these countries/regions. In addition, it has provided spare parts and has contracted for repair of three aviation equipment, repair, and production lines.

ADMINISTRATIVE DIVISION

The Administrative Division (guanli chu) performs the same functions for the Aeronautical Engineering Department as the Administrative Bureau does for the Headquarters Department.

SECTION 9

STRUCTURE BELOW HEADQUARTERS AIR FORCE

The PLAAF chain of command is organized into four levels -- Headquarters Air Force (HqAF), Military Region Air Forces (MRAF), Air Corps/Command Posts, and operational units (Figure 1). Within the MRAFs, there are basically three types of elements -- headquarters (jiguan), units (budui), and directly subordinate units (zhishu budui). The administrative structure at HqAF is mirrored throughout the other three levels. While the Military Region commander is responsible for combined operations, the MRAF commander is responsible for aviation and air defense operations. The seven MRAFs are Shenyang, Beijing, Lanzhou, Nanjing, Guangzhou, Jinan, and Chengdu (See Map).

COMMAND STAFF

The command staff (jiguan/lingdao jiguan) at all levels from the MRAF Headquarters to the regiment consists of the following personnel:

- Commander
- Political commissar
- Deputy political commissar (if there is one)
- Deputy commander(s)
- Chief of staff (Director, Headquarters Department)
- Director, Political Department/Division
- Director, Logistics organization
- Director, Maintenance organization

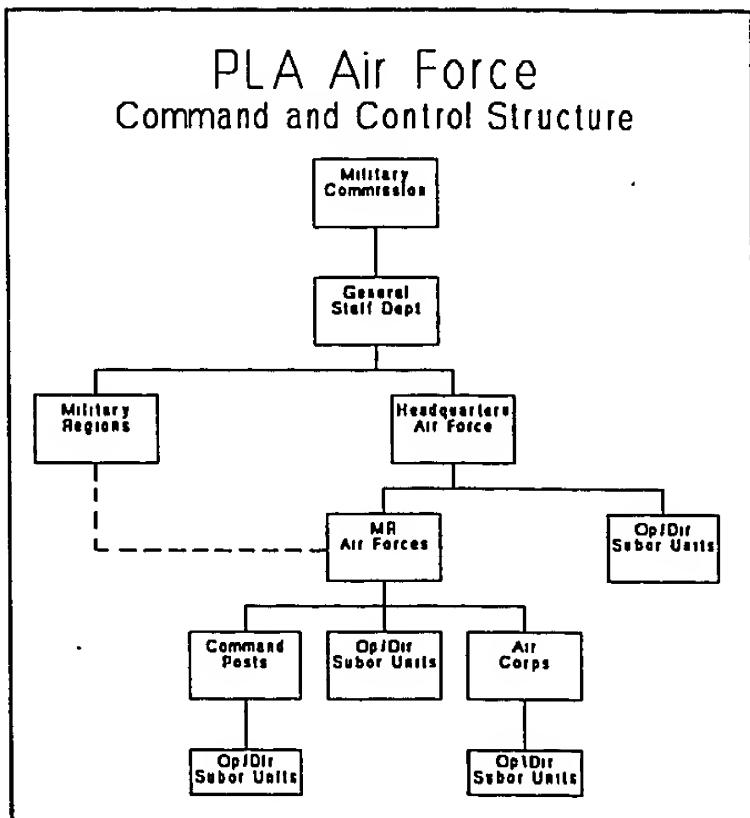


Figure 1

These members make up the Party Standing Committee, of which the political commissar is usually the secretary. Other members of the Party Committee include the commander and political director from each subordinate unit.

ADMINISTRATIVE STRUCTURE

The Headquarters, Political, and Logistics Departments at HqAF, plus most of their subordinate second level elements, are represented at each of the administrative levels below HqAF -- MRAF Headquarters, Air Corps/Command Posts, and operational units. In general, the administrative structure at the MRAF and Air Corps Headquarters is the same. While these three first level departments, along with the Aeronautical Engineering Department, remain as departments at the MRAF and Air Corps levels, HqAF's second level departments are reduced by one step at each level below HqAF. For example, each department (bu) becomes a division (chu), and each division becomes an office (ke).

At the operational unit (budui) level, there is a Headquarters Department (siling bu), Political Department/Division (zhengzhi bu/chu), Logistics Department/Division (houqin bu/chu) or Field Station (changzhan), and Maintenance Division (jiwu chu/jishu chu). The chief of staff, who is also the director of the Headquarters Department, and the director of the Political Department are co-equals at each of these levels. In some cases, the deputy political commissar, if there is one, is also the director of the Political Department/Division.

Below these first level administrative elements, there is a further reduction of the second level elements into offices (shi/ke), sections (zu), or branches (gu). There are also operational elements such as groups (dadui), squadrons (zhongdui), battalions (ying), companies (lian), platoons (pai), squads (ban), or flights (fendui), which carry out the tasks.

One of the major differences between aviation (hangkong bing) and non-aviation units is the maintenance administrative organization. At the HqAF, MRAF, and Air Corps levels, the Aeronautical Engineering Department (hangkong gongcheng bu) is administratively responsible for aviation maintenance and the Logistics Department is responsible for non-aviation (SAM, AAA, radar, and communications) maintenance. These should not be confused, however, with the Technical Support Divisions (jishu qinwu chu/jiqiñ chu) within the Headquarters Department's AAA, SAM, Radar, and Communications Departments/Divisions at the HqAF, MRAF, and Air Corps levels, which are responsible for the technical and operational details of these systems.

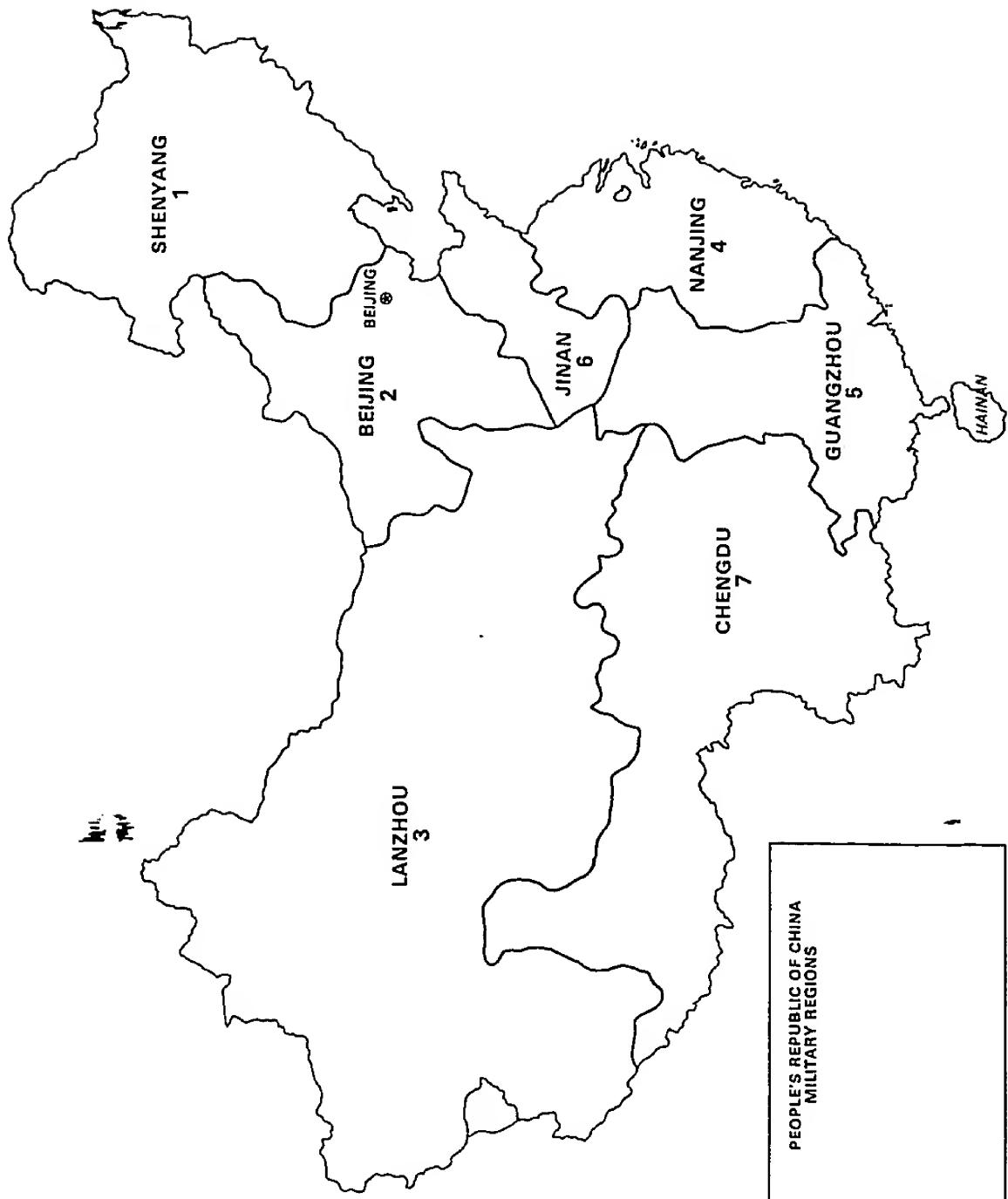
At the unit level, the terms jiwu and jishu are used to differentiate between aviation and non-aviation maintenance, respectively. For the aviation troops, the maintenance organization at an air division/base is the Aircraft Maintenance Division (jiwu chu), and at an air regiment it is the Aircraft Maintenance Group (jiwu dadui). For SAM and AAA troops, there is a Maintenance Department (jishu bu) at the brigade level and a Maintenance Division (jishu chu) at the regiment level. All of the above maintenance elements are co-equals with their counterpart logistics elements. However, at a communications regiment, the Logistics

Division (houqin chu) is responsible for maintenance, since communications regiments do not have a Maintenance Division.

OPERATIONAL STRUCTURE

From 1987-1988, all of the MRAF commanders also became Military Region Deputy Commanders. While the Military Region commander is responsible for combined operations, the MRAF commander is responsible for aviation and air defense operations. In fact, the MRAF commanders actually wear two uniforms. They wear an Army uniform when they are conducting duties as the Military Region deputy commander, and they wear an Air Force uniform when they are conducting Air Force duties.

There is a Command Post (zhihuisuo), which is best translated as an operations centers, at HqAF, each MRAF Hq, each Air Corps, each Command Post (zhihuisuo, such as the Dalian Command Post), and each operational SAM, AAA, aviation, and radar unit down to the regiment level. The operations center, which is separate from the administrative Operations Department/Division (zuozhan bu/chu), is part of the Headquarters Department and comes under the chief of staff. One of the deputy commanders or deputy chiefs of staff is the duty officer on a rotational basis, and the people who work in the command post include at least one representative from each of the second level administrative departments within the four first level departments.



Military Region Air Force Protocol Order.

SECTION 10

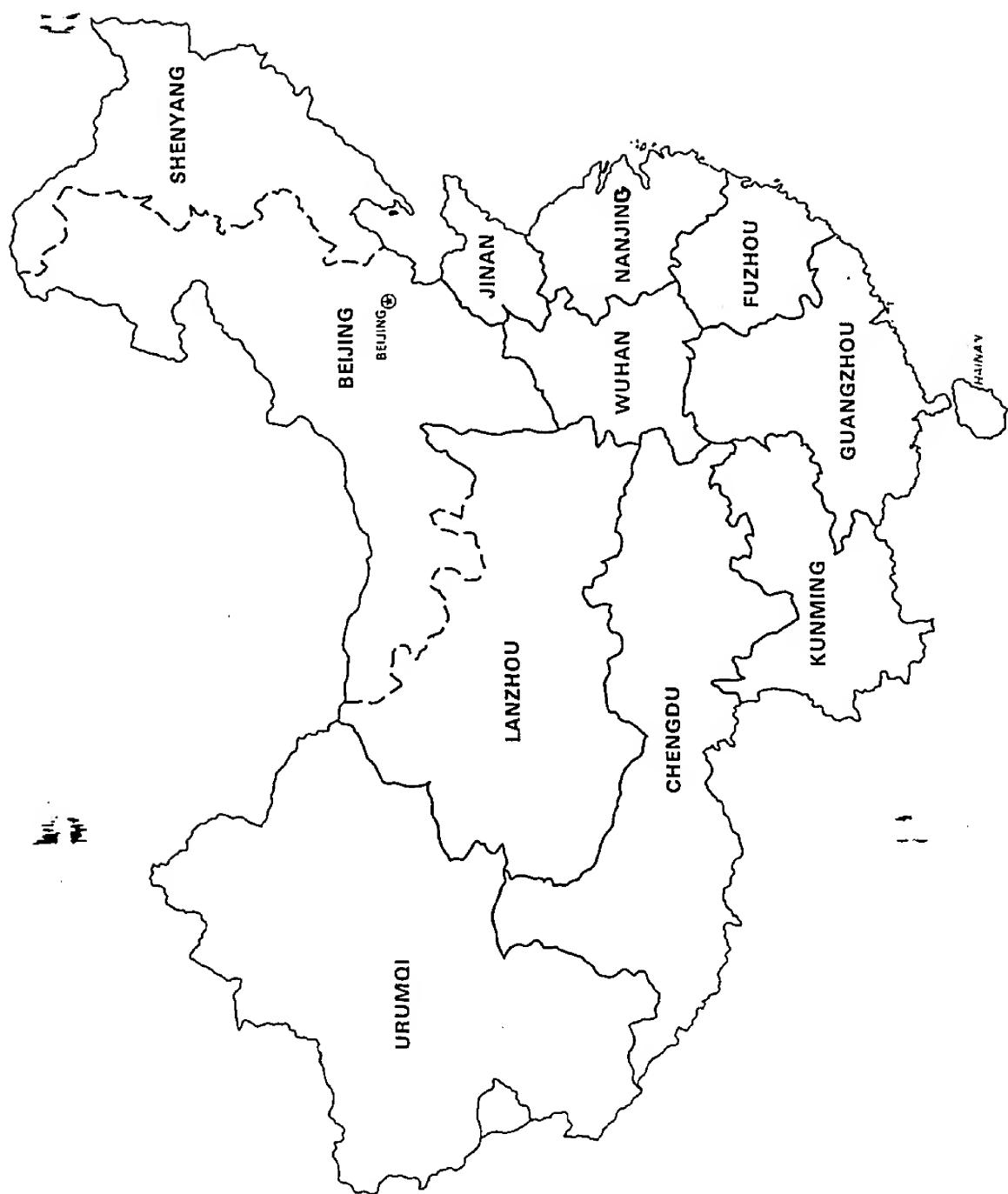
MILITARY REGION AIR FORCE HEADQUARTERS

There have been several changes in the Military Region Air Force (MRAF) Headquarters since 1949. Originally, there were six MRAF Headquarters (junqu kongjun) between October 1950 and May 1955. In May 1955, each Military Region was reapportioned and renamed, so the MRAFs followed suit by changing their names. For example, the Zhongnan MRAF in Wuhan moved to Guangzhou as the Guangzhou MRAF, while the Xinan MRAF in Chengdu moved to Wuhan to become the Wuhan MRAF.

<u>1950 MRAFs</u>	<u>1950 LOCATION</u>	<u>1955 MRAFs</u>
Dongbei (Northeast)	Shenyang	Shenyang MRAF
Huabei (North China)	Beijing	Beijing MRAF
Huadong (East China)	Nanjing	Nanjing MRAF
Zhongnan (South Central)	Wuhan	Guangzhou MRAF
Xibei (Northwest)	Lanzhou	Lanzhou MRAF
Xinan (Southwest)	Chengdu	Wuhan MRAF

In August 1958, the Fuzhou MRAF (junqu kongjun) was organized to command PLAAF units in Fujian and Jiangxi. The Kunming MRAF Command Post (Kunming junqu kongjun zhihuisuo/Kunzhi) and the Chengdu MRAF Command Post (Chengdu junqu kongjun zhihuisuo/Chengzhi) were created on 1 August 1960 and 20 October 1965, respectively. In December 1964, the 9th Air Corps (kong 9 jun) was established in Wulumuqi, but changed to the Xinjiang MRAF Command Post (junqu kongjun zhihuisuo) in November 1978. On 16 April 1979, it again changed its name to the Wulumuqi MRAF Command Post (junqu kongjun zhihuisuo). These three Command Posts all had Air Corps status, and were directly subordinate to HqAF.

Prior to August 1985, there were 11 Military Regions (See Map). When the PLA reduced the number to seven in August 1985, the Chengdu MRAF Headquarters (junqu kongjun) was established, replacing the Chengdu MRAF Command Post. The Kunming MRAF Command Post never had the status of a full MRAF Headquarters. In addition, the Fuzhou MRAF and Wuhan MRAF were abolished. Today, the 8th Air Corps (kong 8 jun) is in Fuzhou and Wuhan is a Command Post (Wuhan zhihuisuo/Wuzhi).

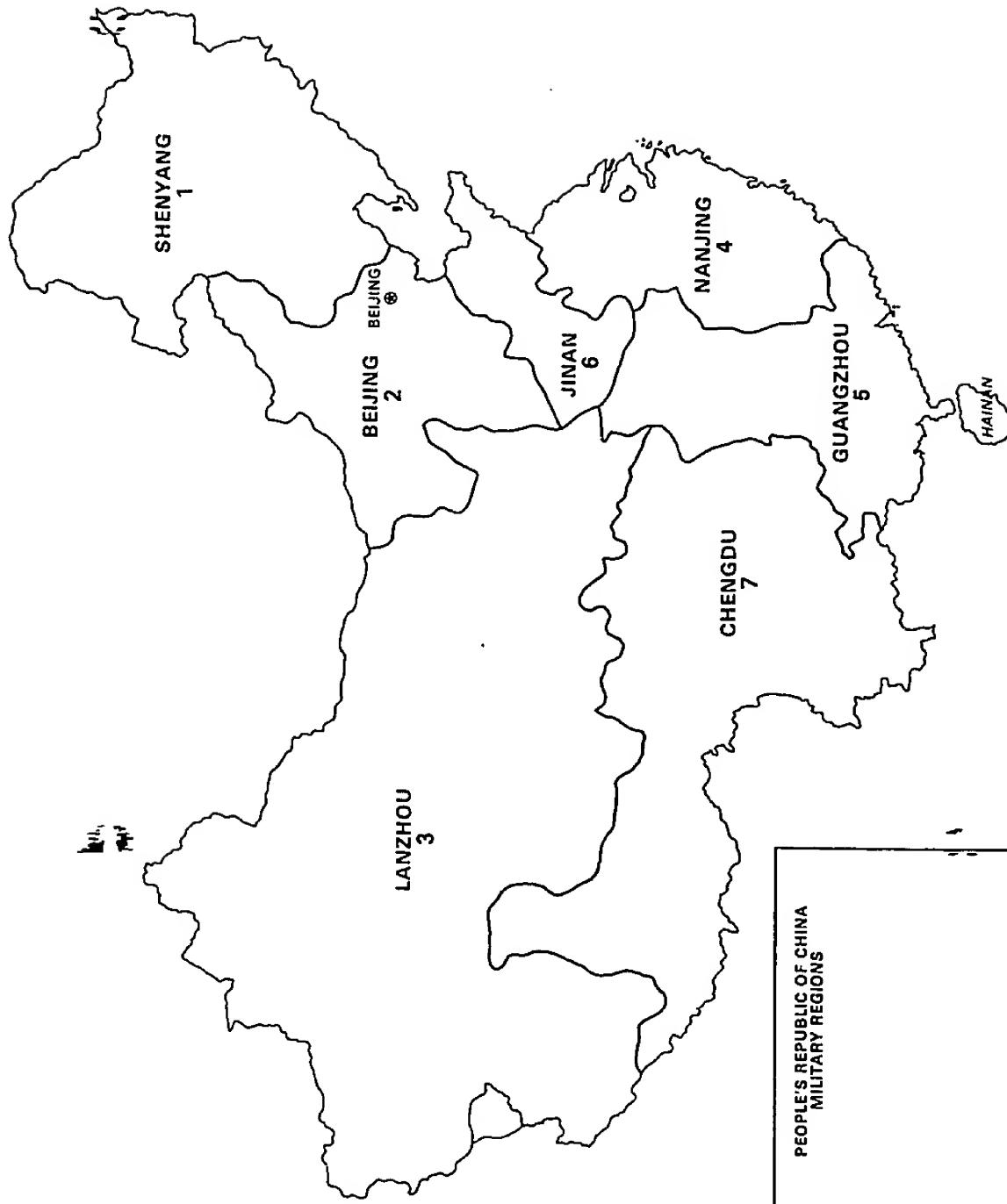


Pre-1985 Military Regions.

MILITARY REGION AIR FORCES TODAY

Today, the seven MRAF Headquarters, in protocol order, are Shenyang, Beijing, Lanzhou, Nanjing, Guangzhou, Jinan, and Chengdu (See Map). Each MRAF is usually referred to by a two character designator. For example, the Shenyang MRAF is referred to as Shenkong. A brief history of the seven MRAFs is shown below:

- The Shenyang MRAF (Shenyang junqu kongjun/Shenkong) originated in 1950 as the Dongbei (Northeast) MRAF and became the Shenyang MRAF in May 1955.
- The Beijing MRAF (Beijing junqu kongjun/Beikong) originated in 1950 as the Huabei (North China) MRAF and became the Beijing MRAF in May 1955.
- The Lanzhou MRAF (Lanzhou junqu kongjun/Lankong) originated in 1950 as the Xibei (Northwest) MRAF and became the Lanzhou MRAF in May 1955.
- The Nanjing MRAF (Nanjing junqu kongjun/Nankong) originated in 1950 as the Huadong (East China) MRAF and became the Nanjing MRAF in May 1955.
- The Guangzhou MRAF (Guangzhou junqu kongjun/Guangkong) originated in 1950 as the Zhongnan (South Central) MRAF in Wuhan and moved to Guangzhou in May 1955 as the Guangzhou MRAF.
- The Jinan MRAF (Jinan junqu kongjun/Jikong) originated in June 1967 by replacing the 6th Air Corps (Kong 6 Jun), which moved to Tangshan. The Jinan MRAF's mission was to provide unified command for PLAAF units in Shandong Province.
- In 1950 the Xinan (Southwest) MRAF was established in Chengdu, but when the Military Region headquarters moved to Wuhan in May 1955 it became the Wuhan MRAF (Wuhan junqu kongjun/Wukong).The Chengdu MRAF Command Post (Chengdu junqu kongjun zhihuisuo/Chengzhi) was established on 20 October 1965 and became the Chengdu MRAF (Chengdu junqu kongjun/ Chengkong) on 15 August 1985.



Military Region Air Force Protocol Order.

COMMAND STAFF

The command staff for an MRAF headquarters consists of the personnel shown below. Between 1987-1988, all of the MRAF commanders also became Military Region (MR) deputy commanders. In some cases, the deputy political commissar is also the director of the Political Department.

- Commander
- Political commissar
- Deputy commander(s)
- Deputy political commissar(s)
- Chief of staff (Director, Headquarters Department)
- Director, Political Department
- Director, Logistics Department
- Director, Aeronautical Engineering Department

The MRAF's Party Standing Committee consists of the command staff, and the Party Committee consists of the Standing Committee plus the commander and political director of each subordinate unit. Except for the Nanjing, Jinan, and Chengdu MRAF Headquarters in 1990, the political commissar was the secretary of the Party Committee and Party Standing Committee. In these three exceptions, however, the commander was the secretary due to their experience.

Following the re-institution of ranks in 1988, the rank structure for the MRAF Headquarters is as follows:

<u>POSITION</u>	<u>RANK</u>
Commander	Lt Gen
Political commissar	Lt Gen
Deputy commanders (2)	Maj Gen
Deputy political commissar (1)	Maj Gen
Chief of staff	Maj Gen
Deputy chiefs of staff (2)	Maj Gen
Political Department director	Maj Gen
Deputy director(s)	Sr Col/Col
Logistics Department director	Maj Gen
Deputy director(s)	Sr Col/Col
Aero-Engineering Department director	Maj Gen
Deputy director(s)	Sr Col/Col

The command staff and senior personnel in each of the MRAF Headquarters administrative elements are equivalent to positions in the Army at the Military Region (da junqu), army (jun), division (shi), and regiment (tuan), and company (lian) level. The

MRAF-Army position equivalents are shown below. Prior to the August 1985 Military Region reorganization, MRAF Headquarters were at the same level as a bingtuan. However, the 1985 reorganization abolished the bingtuan level.

<u>MRAF Hq Position</u>	<u>Army-Equivalent Position</u>
Commander	MR Deputy Commander
Political Commissar	MR Deputy Commander
Deputy Commander	Army Commander
Deputy Political Commissar	Army Commander
Chief of Staff	Army Commander
Director, Political Dept	Army Commander

ADMINISTRATIVE STRUCTURE

Each MRAF Headquarters is organized almost identically to HqAF, except that the second level departments and bureaus at HqAF are divisions (chu) at the MRAF, and the divisions become offices (ke) (Figure 1). Each of these organizations performs the same functions as its counterpart at HqAF. The following paragraphs provide the known administrative elements at the MRAF Headquarters, but almost all of the HqAF second level elements are probably represented. In addition, every MRAF Headquarters has various directly subordinate Legal Advisory Divisions (falu guwen chu). These are fairly new elements and are staffed primarily by personnel with training in the political system. For example, the Lanzhou MRAF Headquarters has a Legal Advisory Division in Xian that was established in 1989. Finally, each MRAF Headquarters has a Discipline Inspection Commission (jilu weiyuanhui/jiwei) that works closely with HqAF's Discipline Inspection Commission.

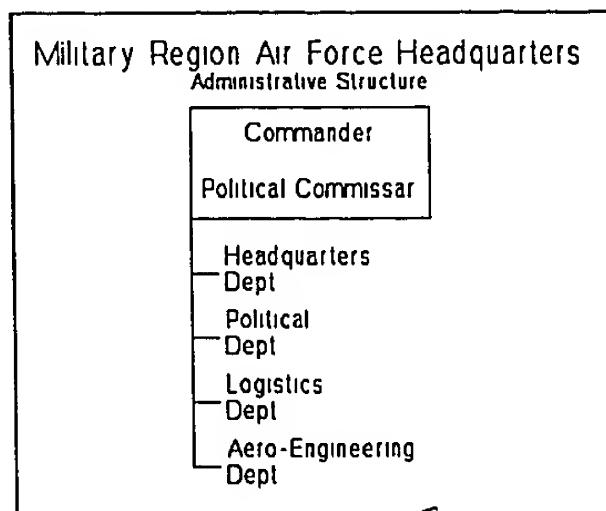


Figure 1

HEADQUARTERS DEPARTMENT

Within the MRAF Headquarters, the chief of staff is the director and the deputy chiefs of staff are the deputy directors of the Headquarters Department (*siling bu*). The Headquarters

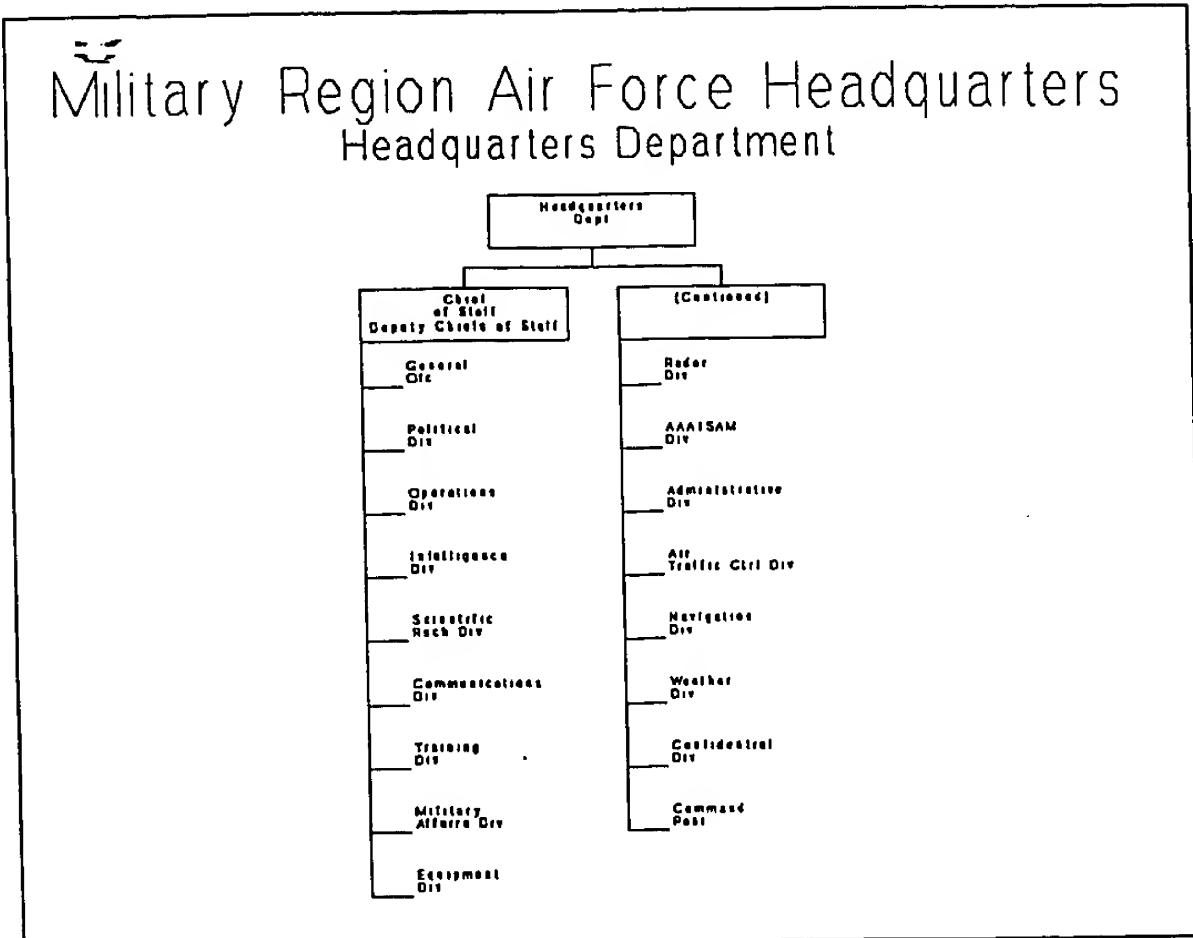


Figure 2

Department has various directly subordinate units (*zhishu budui*) such as a Combat Support Company (*zhanqin lian*), a vehicle company (*qiche lian*), and a weather support station (*qixiang qinwu zhan*). Figure 2 shows the second level divisions that have been noted at the MRAF Headquarters level, of which the four most important divisions are Operations, Military Affairs, Training, and Scientific Research.

The General Office (bangongshi) has at least five subordinate offices as follows:

- Documents Office (dangan ke)
- Secretariat Office (mishu ke)
- The Translation Office (fanyi shi) performs the same functions as the Foreign Affairs Division at HqAF.
- The First Office (yi ke) is responsible for assisting the past and present military commanders and deputy commanders.
- The Second Office (er ke) is responsible for assisting the past and present political commissars and deputy political commissars.

Political Division (zhengzhi chu)

The Operations Division (zuozhan chu) has about 40 personnel assigned.

Intelligence Division (qingbao chu)

Scientific Research Division (keyan chu)

Communications Division (tongxin chu)

The Training Division (junxun chu) incorporates the responsibility for schools, so there is no Schools Division.

Military Affairs Division (junwu chu)

Equipment Division (zhuangbei chu)

Radar Division (leida chu/leida bing chu)

- Training Office (xunlian ke)

The AAA/SAM Division (gaopao daodan chu) is also called the AAA Division (gaopao chu) in some MRAF Headquarters. It incorporates SAM operations and technical matters. It has at least two offices.

- Plans Office (jihua ke)
- Air Materiel Office (gicai ke)

Administrative Division (guanli chu)

The Air Traffic Control Division (hangxing chu) also has an Air Traffic Control Command Center (hangxing zhihui zhongxin) and an Air Traffic Control Dispatch Office (hangxing diaodu shi).

Navigation Division (linghang chu)

Weather Office (qixiang shi)

Confidential Division (jiyao chu)

There is a Command Post (zhihuisuo), which is best translated as an operations centers, at HqAF, each MRAF Hq, each Air Corps, each Command Post (zhihuisuo, such as the Dalian Command Post), and each operational SAM, AAA, aviation, and radar unit down to the regiment level. The operations center is separate from the administrative Operations Department. The people who man the command post include at least one representative from each of the second-level administrative departments within the four first-level departments.

POLITICAL DEPARTMENT

The subordinate elements that have been noted within the Political Department (zhengzhi bu) at the various MRAF Headquarters are listed below and in Figure 3.

The Secretariat Division (mìshù chu) is the same as the General Office at HqAF.

Organization Division (zuzhi chu)

Cadre/Personnel Division (ganbu chu). While there are separate sanatoriums (ganxiusuo) for each of the first level departments at HqAF, the Political Department's ganbu chu at the MRAF Headquarters is responsible for all sanatoriums at the MRAF level.

The Propaganda Division (xuanchuan chu) is also responsible for cultural affairs.

There is no Cultural Division. Some regiments have a Propaganda Branch (xuanchuan gu).

Security Division (baowei chu)

The Mass Works and Liaison Division (qunlian chu) combines the responsibilities of the HqAF's Mass Works Department and Liaison Department.

 Court (fayuan)

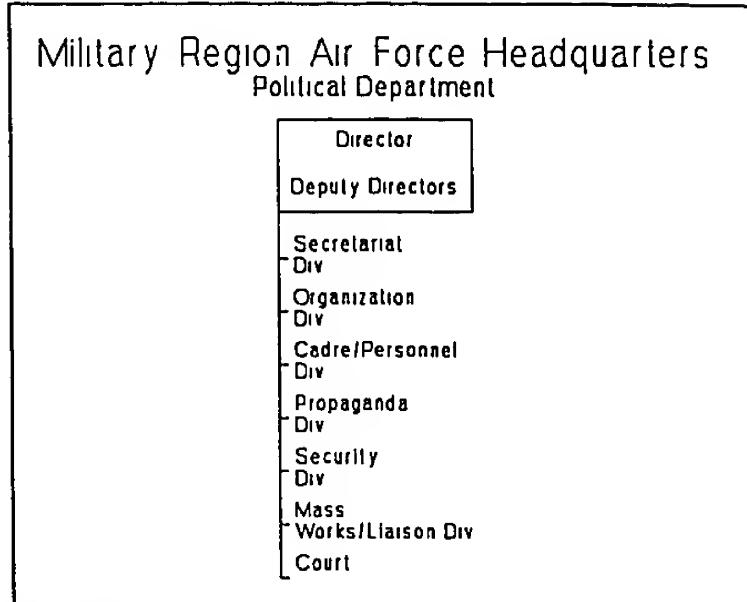


Figure 3

LOGISTICS DEPARTMENT

Similar to HqAF's Logistics Department, the MRAF's Logistics Department (houqin bu) is organized more like a command than a department. For example, the Logistics Department has a chief of staff, and probably has a political commissar and deputy chiefs of staff as well. Each MRAF Logistics Department also has a Party Committee and Standing Committee. Because the various PLAAF Logistics Departments employ the largest number of personnel, they are sometimes not co-located with the other three first level departments. For example, the HqAF and Beijing MRAF Logistics Departments are not co-located in the HqAF and Beijing MRAF Headquarters compounds, but the Shenyang MRAF Logistics Department is located in the Shenyang MRAF Headquarters compound.

The MRAF Logistics Departments also have directly subordinate training regiments (zhishu xunlian tuan), fuel depot regiments (youliaojian tuan), farms (nongchang), vehicle repair shops (qiche xiulian chang), and hospitals. The Nanjing MRAF has a Boat Group (chuanting dadui), which in turn has a Logistics Department (houqin bu). Figure 4 shows the divisions (chu) within the various MRAF Headquarters Logistics Departments that have been noted:

General Office
(bangongshi)

Political Department
(zhengzhi bu)

Security Office
(baowei ke)

Finance Division (caiwu chu)

Quartermaster Division (junxu chu)

Health Division (weisheng chu)

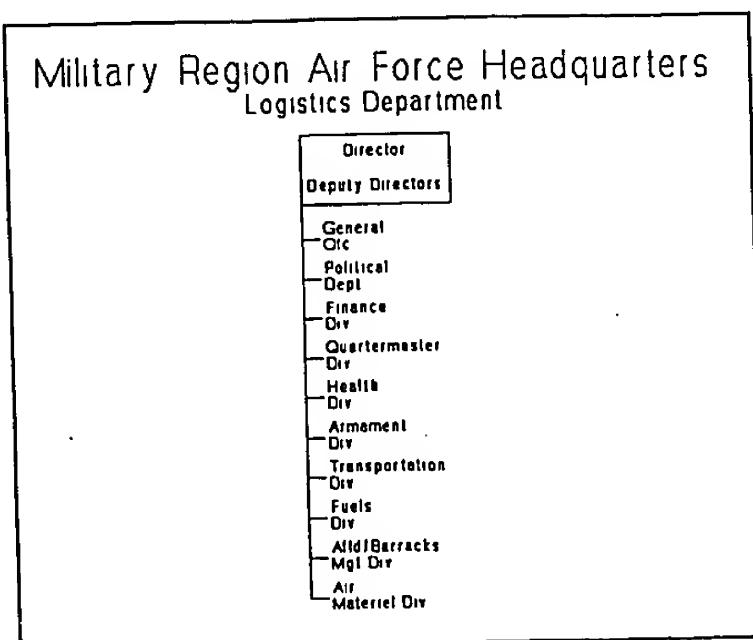


Figure 4

Armament Division (junxie chu)

- Plans and Finance Office (jihua caiwu ke)
- Aviation Munitions Office (hangkong danyao ke)
- Avionics/Electronics Office (dianzi ke)
- Radar Office (leida ke)
- Surface-to-Air Missile Office (dikong daodan ke)

Transportation Division (yunshu chu)

Fuels Division (youliao chu)

Airfield and Barracks Management Division (jiying chu)

Air Materiel Division (hangcai chu)

AERONAUTICAL ENGINEERING DEPARTMENT

Figure 5 shows the divisions within the MRAF's Aeronautical Engineering Department (hangkong gongcheng bu) that have been noted:

The Repair Division (xiuli chu) is subordinate to the Field Maintenance Department at HqAF, and is responsible for intermediate level aviation repair/ overhaul facilities (hangxiu chang/xiupei chang). There is at least one of these facilities per Military Region.

Factory Management Division (gongguan chu)

Procurement Division (dinghuo chu)

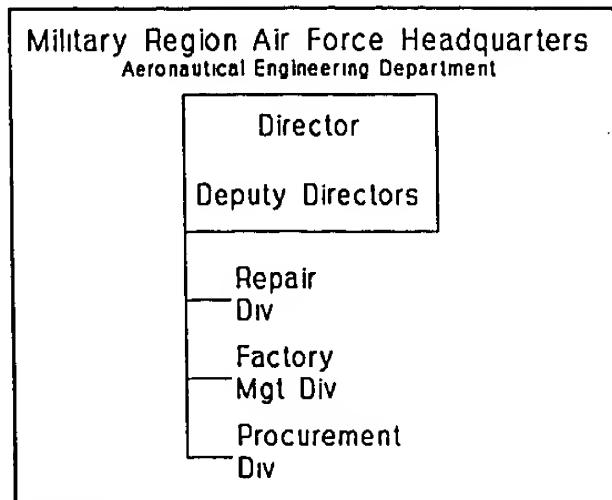


Figure 5

SECTION 11

AIR CORPS

Originally, the PLAAF had up to 11 Air Corps (jun/kongjun jun) located throughout China whose mission was to integrate the air defense units to protect a particular area or city. Over the past several years, some Air Corps have been abolished and some have been converted into Command Posts (zhihuisuo). Today, only four Air Corps remain active.

COMMAND STAFF

Within each Air Corps Headquarters, the command staff and senior personnel are equivalent to positions in the Army at the army (jun), division (shi), and regiment (tuan) level. As a result, a person's rank is still not as important as the Army-equivalent position (zhiwu dengji) that person holds. The command staff consists of the following personnel (the deputy political commissar is sometimes concurrently the director of the Political Department):

<u>Position</u>	<u>Rank</u>
Commander (junzhang)	Maj Gen
Political commissar (zhengwei)	Maj Gen
Deputy commander(s)	Maj Gen/Sr Col
Deputy political commissar(s)	Maj Gen/Sr Col
Chief of staff (Director Headquarters Dept)	Maj Gen/Sr Col
Director, Political Department	Maj Gen/Sr Col
Director, Logistics Department	Sr Col
Director, Aeronautical Engineering Department	Sr Col

Each Air Corps has a Party Committee (dangwei) and Standing Committee (dangwei changwei) with the political commissar as the secretary of each. While the Standing Committee consists of the command staff, the Party Committee consists of Standing Committee plus the commanders and political commissars of all subordinate units at the next level, such as air divisions, combined brigades, radar regiments, and communications regiments.

ADMINISTRATIVE STRUCTURE

Like HqAF and each MRAF Headquarters, the administrative organization at an Air Corps Headquarters consists of a Headquarters Department, Political Department, Logistics Department, and Aeronautical Engineering Department (Figure 1). The chief of staff is the director and the deputy chiefs of staff are the deputy directors of the Headquarters Department. Each of the four first level departments have the same subordinate divisions

(chu) as the MRAF Headquarters. The department and division directors are senior colonels and colonels. The following administrative elements have been noted in the Air Corps Headquarters, but probably also include all of those at the MRAF Headquarters.

Headquarters Department (siling bu)

- Operations Division (zuozhan chu)
- Air Traffic Control Division (hangxing chu)
- Command Post (zhihuisuo)

Political Department (zhengzhi bu)

Logistics Department (houqin bu)

- Air Materiel Division (hangcai chu)
- Health Division (weisheng chu)

Aeronautical Engineering Department (hangkong gongcheng bu)

OPERATIONAL STRUCTURE

Air Corps are structured like an MRAF Headquarters as an administrative and operational entity. Each Air Corps has various operational units (budui) and directly subordinate units (zhishu budui). Although Air Corps have all five branches as subordinate elements, one Air Corps has been referred to as an Aviation Troop Air Corps (hangkong bing jun). Within each Air Corps' Headquarters Department there is a Command Post (zhihuisuo), which is best translated as an operations centers. The Command Post is separate from the Operations Department and comes under the chief of staff. There is at least one representative from each of the second-level administrative departments within each of the four first-level departments who man the Command Post. Each subordinate operational unit also has a Command Post.

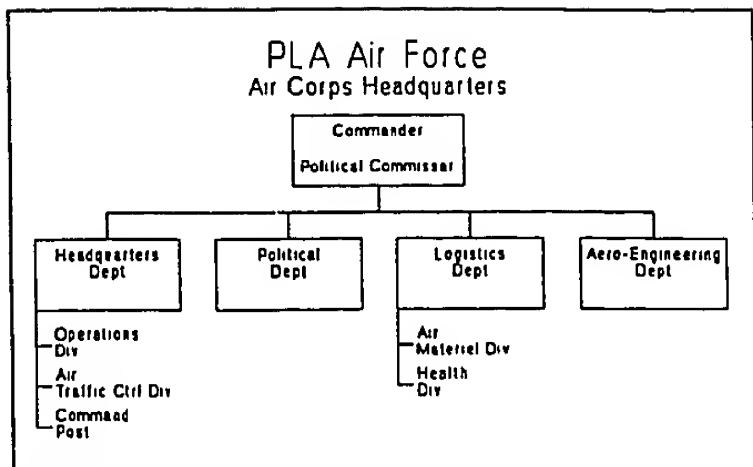


Figure 1

Since 1949, the PLAAF has had up to 11 air corps, but some of them have been abolished or changed to command posts (zhihuisuo) (See Map).

<u>Air Corps</u>	<u>Location</u>	<u>MRAF</u>	<u>Remarks</u>
First	Changchun	Shenyang	Active
Second	Dandong	Shenyang	Abolished
Third	Dalian	Shenyang	Command Post
Fourth	Shanghai	Nanjing	Command Post
Fifth	Hangzhou	Nanjing	Abolished
Sixth	Tangshan	Beijing	Command Post
Seventh	Nanning	Guangzhou	Active
Eighth	Fuzhou	Nanjing	Active
Ninth	Wulumuqi	Lanzhou	Command Post
Tenth	Datong	Beijing	Active
Eleventh	Xian	Lanzhou	Command Post

The 1st Air Corps (kong 1 jun) was established in Changchun in the early 1950s.

The 2nd Air Corps (kong 2 jun) was established in the early 1950s at Dandong and was later abolished. It was not replaced by a Command Post.

The 3rd Air Corps (kong 3 jun) was originally formed at Dalian in the early 1950s, but was later changed to the Dalian Command Post (Dalian zhihuisuo/Dazhi).

The 4th Air Corps (kong 4 jun) was established in Shanghai in August 1952, but was later changed to the Shanghai Command Post (Shanghai zhihuisuo/ Shangzhi).

The 5th Air Corps (kong 5 jun) was first noted in Hangzhou in 1954, at which time it had an Air Defense Command Post (fangkong zhihuisuo) in Guangzhou and Nanchang. In July 1958, some staff members were sent to Jinjiang, Fujian Province, to set up a command post opposite Taiwan. The 5th Air Corps was abolished in the late 1980s.

The 6th Air Corps (kong 6 jun) was originally established in Jinan, but was replaced in June 1967 by the Jinan MRAF (junqu kongjun) Headquarters. The 6th Air Corps then moved to Tangshan, where it was noted in 1976 during the earthquake. Sometime after 1976 it became the Tangshan Command Post (Tangshan zhihuisuo/Tangzhi).

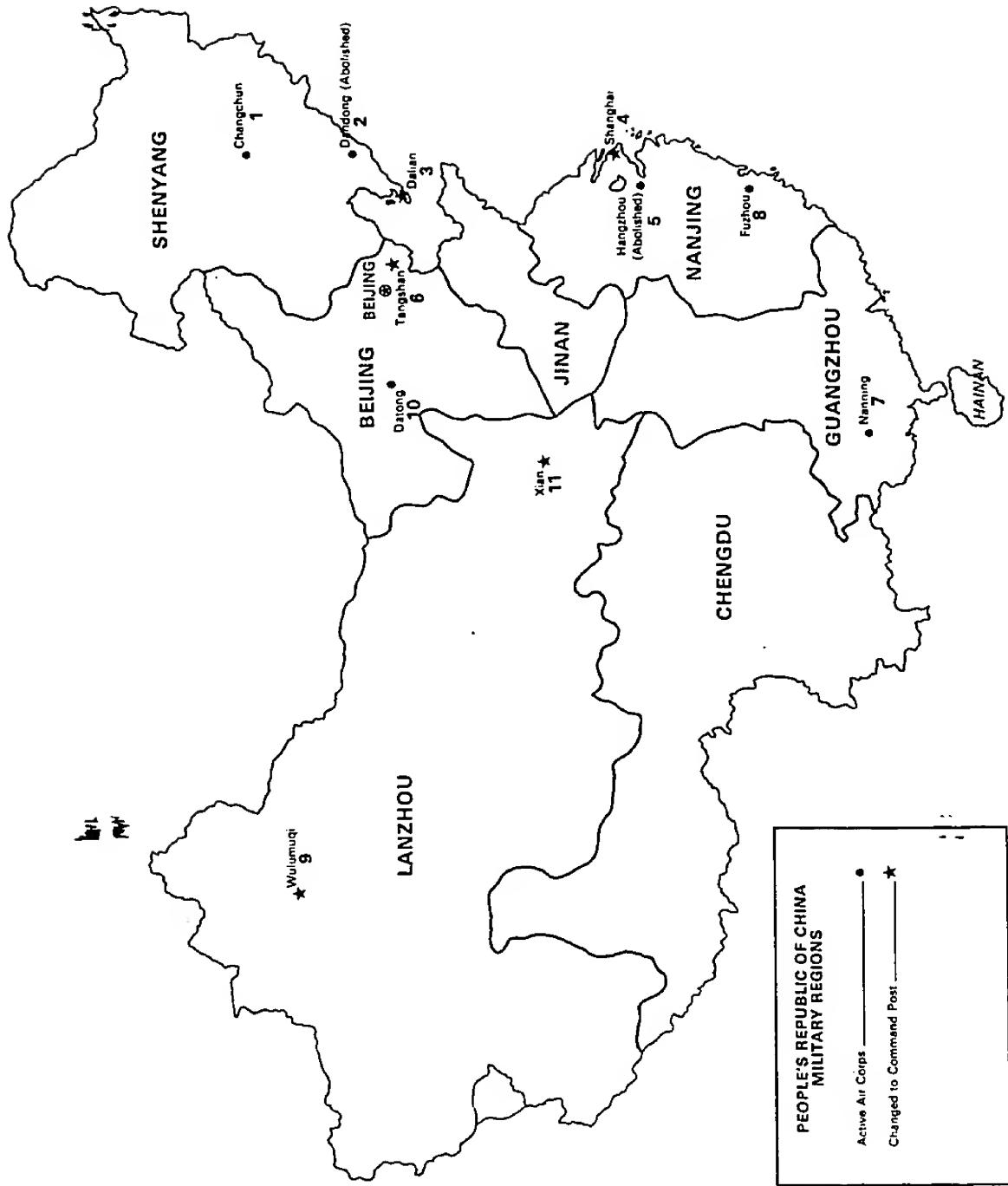
In 1962 the Shantou Air Force Command Post (kongjun zhihuisuo) in Guangdong Province, became the 7th Air Corps (kong 7 jun). As a result of the Gulf of Tonkin Incident in August 1964, the 7th Air Corps, which at that time was in Xingning, Guangdong Province, was moved to Nanning, Guangxi Autonomous Region. The 7th Air Corps became the PLAAF's forward command post (qianzhi) during the 1979 border conflict with Vietnam.

In September 1955, the PLA Air Defense Force's 1st Corps (fangkongjun diyi jun) was established in Fuzhou. This Corps was replaced in July 1958 by the Fuzhou MRAF (junqu kongjun), which was organized to command Fujian and Jiangxi PLAAF units. At the same time the MRAF Headquarters was established, the 5th Air Corps also sent personnel to Jinjiang, opposite Taiwan, to set up a Command Post. On 23 August 1985, the Fuzhou MRAF was abolished. The 8th Air Corps (kong 8 jun), which is currently located in Fuzhou, was first noted in 1967, when a member of the Air Corps' Command Post directed an aircraft from the 24th Air Division in Zhangzhou, Fujian Province, on an intercept mission. In 1976, the 8th Air Corps was located in Chengdu at the same time the Chengdu MRAF Command Post (Chengdu junqu kongjun zhihuisuo) existed. At some point after 1977, the 8th Air Corps moved from Chengdu to Fuzhou.

In November 1964 the 9th Air Corps (kong 9 jun) was established in Wulumuqi. In November 1978, it became the Xinjiang MRAF Command Post (Xinjiang junqu kongjun zhihuisuo), then changed its name to the Wulumuqi MRAF Command Post (Wulumuqi junqu kongjun zhihuisuo) on 16 April 1979.. When the Wulumuqi Military Region was abolished in August 1985, it became the Wulumuqi Command Post (Wulumuqi zhihuisuo/Wuzhi).

The 10th Air Corps (kong 10 jun) is located in Datong.

The 11th Air Corps (kong 11 jun) was located in Hetian in the 1960s, and replaced the Lanzhou MRAF Headquarters at Xian, when the MRAF Headquarters moved from Xian to Lanzhou. Later, the Xian Command Post (Xian zhihuisuo/ Xizhi) replaced the 11th Air Corps.



PLA Air Force Air Corps.

SECTION 12

COMMAND POSTS

The PLAAF currently has eight Command Posts (zhihuisuo) located throughout China, whose mission is to integrate the air defense units to protect a particular area or city. These Command Posts have two separate origins -- three of them were the regional PLAAF Headquarters for three Military Regions prior to the reduction from eleven to seven Military Regions in 1985, and five of them were formed from previous Air Corps (jun/kongjun jun).

Some Command Posts have supplemented the money received from HqAF by various methods. For example, one of the Dalian Command Post's subordinate units made 4.5 million yuan (120 million USD) from 1985-1988 by engaging in private enterprise. The Command Post used the money to improve the quality of life aspects for a total of 25 companies belonging to the three radar regiments. Some money was also used to enlarge parking ramps at one of the aviation regiments that received a new type of aircraft.

COMMAND STAFF

The command staff at a typical Command Post consists of the following personnel:

<u>Position</u>	<u>Rank</u>
Commander (silingyuan)	Maj Gen
Political commissar (zhengwei)	Maj Gen
Deputy commander (1)	Sr Col
No deputy political commissar	
Chief of staff (Director, Headquarters Dept)	Col
Director, Political Division	Col
Director, Logistics Division	Col
Director, Maintenance Division	Col

Each Command Post has a Party Committee (dangwei) and a Party Standing Committee (dangwei changwei). The Standing Committee consists of the command staff, and the Party Committee consists of the Standing Committee plus the commander and political commissar of each subordinate unit.

The command staff and the directors of each of Command Post administrative elements are equivalent to positions in the Army at the army (jun), division (shi), and regiment (tuan) level. Therefore, each person's rank is still not as important as the Army-equivalent position that person holds. The Command Post-Army equivalent positions are as follows:

<u>Command Post Position</u>	<u>Army Equivalent</u>
Dalian CP Commander	Army Commander
Tangshan CP Commander	Army Deputy Commander
Xian CP Commander	Army Commander
Wulumuqi CP Commander	Army Commander
Shanghai CP Commander	Army Commander
Wuhan CP Commander	Army Deputy Commander
Kunming CP Commander	Army Commander
Chengdu CP Commander	Army Commander
Lhasa CP Commander	Army Commander Division Commander

ADMINISTRATIVE STRUCTURE

Over the past several years, Command Posts have replaced five former Air Corps. One of the primary reasons for this change was to eliminate various administrative functions and to make the Command Post an operational (not an administrative) organization. As a result, the first level Political Department, Logistics Department, and Aeronautical Engineering Department which are found at the HqAF, MRAF Headquarters, and Air Corps Headquarters levels have all been reduced to a Political Division, Logistics Division, and Aircraft Maintenance Division, and placed directly under the Headquarters Department (siling bu). Some Command Posts, such as Xian and Wuhan, do not have any directly subordinate aviation units, so they do not have an Aircraft Maintenance Division. In addition, some of the administrative divisions (chu) in the Headquarters Department have been eliminated, and their functions at the unit level are now managed directly from the MRAF Headquarters. The Headquarters Department (siling bu) has at least 16 second level divisions as shown in Figure 1:

- Political Division (zhengzhi chu)
- Logistics Division (houqin chu)
- Maintenance Division (jiwu chu)
- Operations Division (zuozhan chu)
- Intelligence Division (qingbao chu)

- Scientific Research Division (keyan chu)
- Equipment Division (zhuangbei chu)
- Military Affairs Division (junwu chu)
- Radar Division (leida chu)
- Communications Division (tongxin chu)
- AAA Division (gaopao chu)
- Administrative Division (guanli chu)
- Air Traffic Control Division (hangxing chu)

- Navigation Division (linghang chu)
- Confidential Division (jiyao chu)
- Weather office (qixiang shi)
- Command Post (zhihuisuo)

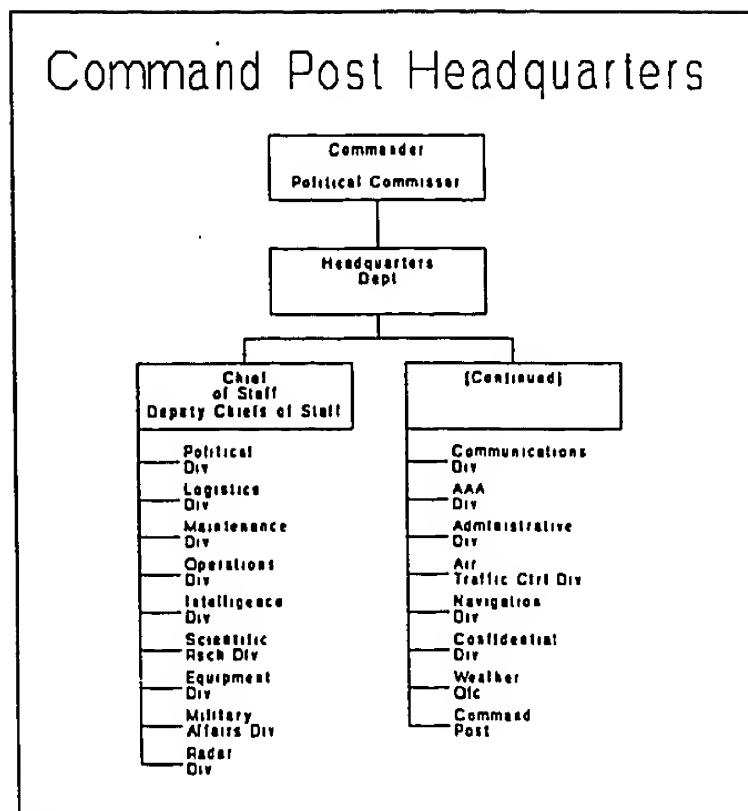


Figure 1

OPERATIONAL STRUCTURE

Unlike the Air Corps, Command Posts do not have number designators. Instead, they take the name of their location, such as the Dalian Command Post. In addition, their names are usually shortened to two characters. For example, the Dalian zhihuisuo is simply known as Dazhi.

A typical Command Post controls one or more aviation units, 1-3 radar regiments, 1-2 AAA regiments, and 1-2 SAM regiments. Some Command Posts also control a combined (AAA/SAM) brigade (huncheng lu). Within each Command Post's Headquarters Department there is a Command Post (also called a zhihuisuo), which is best translated as an operations

centers. The operations center is separate from the Operations Department and comes under the chief of staff. There is at least one representative from each of the Headquarters Department's second-level administrative divisions. Each subordinate operational unit also has an operations center.

In August 1985, the 11 Military Regions were reduced to seven. Although each of the 11 Military Regions had a PLAAF Headquarters, not all of them had the status of an MRAF Headquarters (junqu kongjun). For example, the PLAAF's regional Headquarters at Chengdu, Kunming, and Wulumuqi were MRAF Command Posts (junqu kongjun zihuisuo) and were directly subordinate to HqAF. Furthermore, they only had the status equivalent to an Air Corps. In addition, the Lhasa Command Post only has the status equivalent to a brigade (lu). The Command Posts as of 1991 are shown below (See Map):

<u>MRAF</u>	<u>Location</u>	<u>Name</u>
Shenyang	Dalian	Dazhi
Beijing	Tangshan	Tangzhi
Lanzhou	Xian	Xizhi
Lanzhou	Wulumuqi	Wuzhi
Nanjing	Shanghai	Shangzhi
Guangzhou	Wuhan	Wuzhi
Jinan	None	None
Chengdu	Kunming	Kunzhi
Chengdu	Lhasa	Lazhi

 The Dalian Command Post (Dalian zihuisuo/Dazhi) was originally the 3rd Air Corps (kong 3 jun).

The 6th Air Corps (kong 6 jun) was originally established in Jinan, but was replaced in June 1967 by the Jinan MRAF (junqu kongjun) Headquarters. The 6th Air Corps then moved to Tangshan, where it was noted in 1976 during the earthquake. Sometime after 1976 it became the Tangshan Command Post (Tangshan zihuisuo/Tangzhi).

The 11th Air Corps (kong 11 jun) was located in Hetian in the 1960s, and replaced the Lanzhou MRAF Headquarters at Xian, when the MRAF Headquarters moved from Xian to Lanzhou. Later, the Xian Command Post (Xian zihuisuo/ Xizhi) replaced the 11th Air Corps.

The Wulumuqi Command Post (Wulumuqi zihuisuo/Wuzhi) was formed as the 9th Air Corps in November 1964. In November 1978, the 9th Air Corps became the Xinjiang MRAF Command Post (Xinjiang junqu kongjun zihuisuo), then changed its name to the Wulumuqi MRAF Command Post (Wulumuqi junqu kongjun zihuisuo) on 16 April 1979. When the Wulumuqi Military Region was abolished in August 1985, it became the Wulumuqi Command Post (Wulumuqi zihuisuo/ Wuzhi).

The Shanghai Command Post (Shanghai zihuisuo/Shangzhi) was originally the 4th Air Corps.

When the Xinan (Southwest) Military Region headquarters in Chengdu moved to Wuhan in May 1955, the Xinan MRAF became the Wuhan MRAF (Wuhan junqu kongjun/Wukong). When the Wuhan Military Region was abolished in August 1985, the Wuhan MRAF became the Wuhan Command Post (Wuhan zihuisuo/Wuzhi).

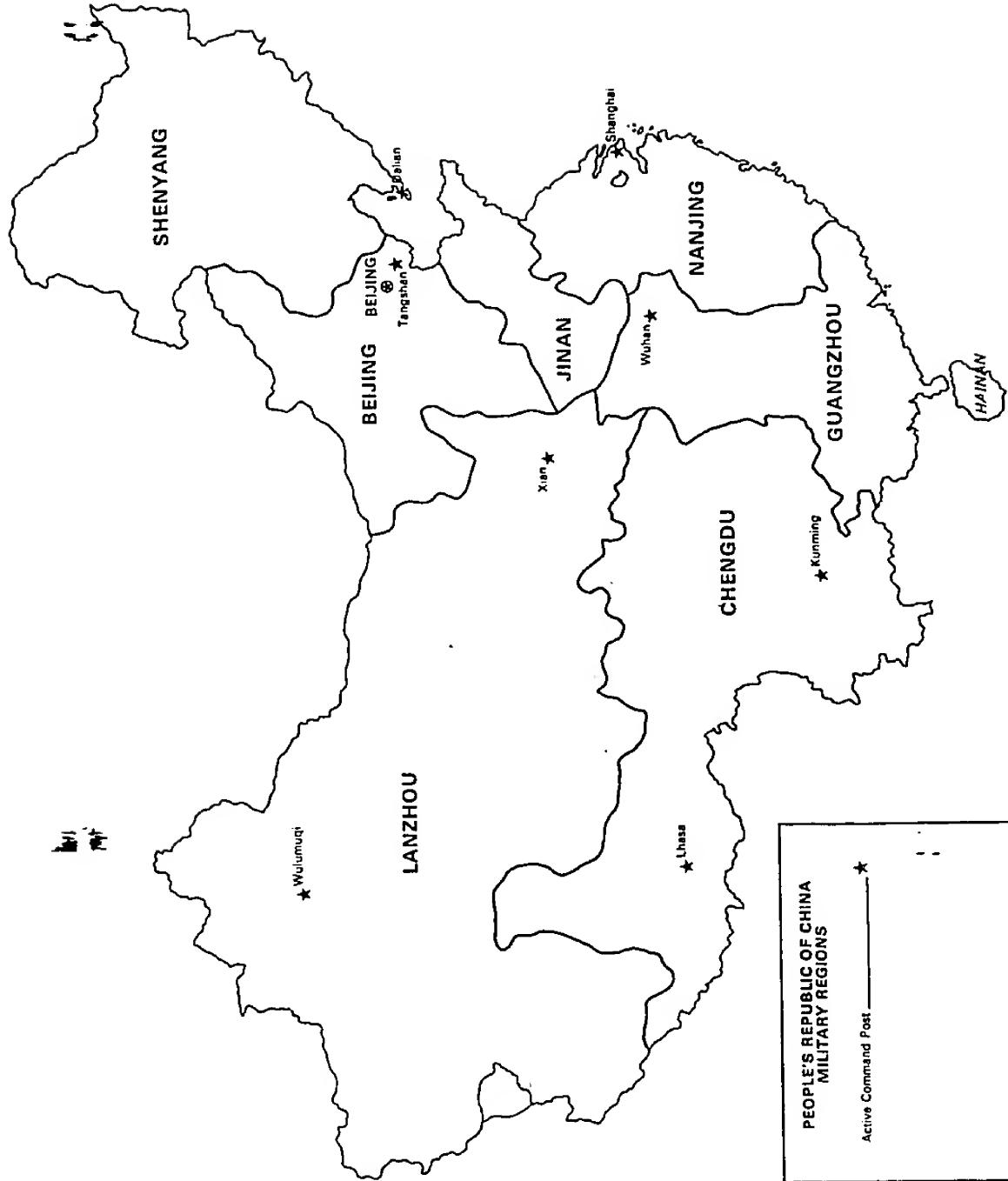
The Kunming MRAF Command Post (Kunming junqu kongjun zihuisuo/Kunzhi) was established on 1 August 1960, and later became the Kunming Command Post (Kunming zihuisuo/Kunzhi) in August 1985.

The Chengdu MRAF Command Post (Chengdu junqu kongjun zihuisuo/ Chengzhi) was established on 20 October 1965. The Chengdu MRAF Command Post was upgraded to a full MRAF Headquarters (junqu kongjun) on 15 August 1985, making it an equal to the other six MRAF Headquarters.

The Lhasa Command Post (Lasa zihuisuo/Lazhi) is the smallest command post and is equivalent to a brigade.



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PLA Air Force Command Posts.

SECTION 13

AVIATION TROOPS

As one of the PLAAF's five branches (bingzhong), the Air Force's aviation troops (hangkong bing) consists of fighter (qianji hangkong bing), ground attack aircraft (qiangji hangkong bing), bomber (hongzha hangkong bing), transport (yunshu hangkong bing), and reconnaissance (zhenchaji) units. The primary missions of the aviation troops are support to the ground forces and air defense. As the PLAAF's main arm, the aviation troop aircraft are organized into air divisions (shi), air regiments (tuan), groups (dadui), squadrons (zhongdui), and flights (fendui). There are also associated logistics, maintenance, and support units, which are further organized into regiments, battalions (ying), companies (lian), platoons (pai), and squads (ban). Air divisions can be directly subordinate to HqAF (34th Transport Division), to an MRAF Headquarters (9th Air Division), to an Air Corps (42nd Air Division), or to a Command Post. There are also independent regiments (duli dadui) and groups (duli dadui), which conduct specialized missions such as operational test and evaluatin (OT&E) of equipment, reconnaissance and surveying, troop transport, and reforestation. For the most part, these aircraft include reconnaissance fighters, as well as IL-14 and Yun-5 transports.

THE EARLY YEARS

The 4th Combined Brigade (huncheng lu) was established at Nanjing in June 1950 and became the PLAAF's first aviation troop unit. It consisted of the 10th Pursuit (quzhu) Regiment, the 11th Pursuit Regiment, the 12th Bomber (hongzha) Regiment, and the 13th Attack (chongji) Regiment. Later, this brigade split to form some of the first air divisions.

In October 1950, the 3rd Pursuit Brigade (MIG-15) was established in Shenyang, consisting of the 7th, 8th, and 9th Regiments, and the 4th Pursuit Brigade (MIG-15) was formed in Liaoyang, Liaoning Province, using the 4th Combined Brigade as a basis. The 4th Pursuit Brigade consisted of the 4th Combined Brigade's 10th Pursuit Regiment and the 3rd Pursuit Brigade's 7th Regiment (which changed to the 12th Regiment). In late October, the 3rd and 4th Brigades underwent several significant changes.

- Each brigade reduced the number of regiments from three to two.
- Each brigade dropped the type of unit (Pursuit/Attack/Bomber) from the name.
- The 3rd Pursuit Brigade became the PLAAF 3rd Division (kong 3 shi).
- The 4th Pursuit Brigade became the PLAAF 4th Division (kong 4 shi). In March 1956, the 4th Division became the 1st Air Division (kong 1 shi).

By the end of May 1951, the PLAAF had 17 air divisions, including 12 pursuit divisions, two attack divisions, two bomber divisions, and one transport division. Each of the divisions had two regiments. This number expanded rapidly, so that by March 1953, there was a total of 28 air divisions and 56 air regiments were formed. At the same time, each division began changing from two regiments back to three regiments. The IL-10 were ground attack aircraft, the TU-2 and LA-2 were bombers, the IL-12 was a transport, and the MIG-15, MIG-9 and LA-9 were fighters. A list of aviation units is as follows:

The table below shows the origins of the PLAAF's 1st through 18th Air Divisions:

<u>Division</u>	<u>Regiments</u>	<u>Date</u>	<u>Aircraft</u>	<u>Location</u>
1st	1st/2nd/3rd	Mar 56	-----	Anshan, Liaoning
2nd	4th/6th	Nov 50	MIG-15	Shanghai Longhua
3rd	7th/8th/9th	Oct 50	MIG-15	Shenyang
4th	10th/12th	Oct 50	MIG-15	Liaoyang, Liaoning
5th	13th/15th	Dec 50	IL-10	Kaiyuan, Liaoning
6th	16th/17th	Nov 50	MIG-9	Anshan, Liaoning
7th	19th/21st	Dec 50	MIG-9	Dongfeng Xian, Jilin
8th	22nd/24th	Dec 50	LA-2	Siping, Jilin
9th	25th/27th	Dec 50	LA-9	Jilin, Jilin
Transferred to Naval Aviation on 7 December 1955				
10th	28th/30th	Jan 51	TU-2	Nanjing, Jiangsu
11th	31st/33rd	Feb 51	IL-10	Xuzhou, Jiangsu
12th	34th/36th	Dec 50	MIG-9	Xiaoshan Xian, Zhejiang
13th	37th/39th	Apr 51	IL-12	Xinjin Xian, Sichuan
14th	40th/42nd	Feb 51	LA-9	Beijing Nanyuan
15th	43rd/45th	May 51	MIG-15	Huaide Xian, Jilin
16th	46th/48th	Feb 51	MIG-15	Qingdao, Shandong

17th	49th/51st	Apr 51	MIG-15	Tangshan, Hebei
Transferred to Naval Aviation on 1 June 1951				
18th	52nd/54th	May 51	MIG-15	Guangzhou, Guangdong

Between 1951-1954, several more divisions and regiments were added. By early 1954, the PLAAF had 28 air divisions and 70 air regiments, with 3000 aircraft.

- November 1951 - May 1952: The 19th, 21st, and 24th Fighter Divisions, the 20th, 23rd, and 25th Bomber Divisions, the 22nd Ground Attack Division, and the 1st and 2nd Independent Reconnaissance Regiments were formed.

- December 1952 - March 1953: The 26th and 27th Fighter Divisions, the 28th Ground Attack Division, the 3rd Independent Transport Regiment, and the 4th Independent Reconnaissance Regiment were formed.

- Late 1953 - 1954: The 29th Fighter Division and the 5th Independent Reconnaissance Regiment were formed.

In 1953, aviation troops were divided into 1st, 2nd, and 3rd level groups (dadui), based upon their training level. In 1964, the groups were renamed "A" (jia), "B" (yi), and "C" (bing) groups. This system was suspended during the Cultural Revolution, but was revived in 1977. In 1978, type "A" regiments (jia lei tuan) were organized. Fighter and ground attack pilots in these regiments were required to be able to fly in daytime VFR (visual flight regulations) and IFR (instrument flight regulations), complete all kinds of operational missions, and to be able to fly singly to another airfield in nighttime VFR conditions. Bomber pilots were required to be able to complete their mission in daytime VFR and IFR conditions, and nighttime VFR conditions, as well as fly singly to another airfield in nighttime IFR conditions.*

The Korean conflict looms large as a galvanizing event in PLAAF history. A comparison of USAF and PLAAF accounts of the Korean conflict and air battles over the Taiwan Strait (1958) are informative. According to the PLAAF's published history, China shot down 330 aircraft and hit another 95 during the Korean War. Chinese pilots also shot down two aircraft, hit one and sustained no losses during the 1958 engagement. According to the same book, the PLAAF downed 110 additional manned and unmanned aircraft over a period of several years. According to U.S. Air Force data, the Far East Air Force (FEAF) Command destroyed 976 and damaged 1009 enemy aircraft in air-to-air combat during the

* The PLAAF refers to flying in day VFR (zhoujian jiandan), day IFR (zhoujian fuza), night VFR (yejian jiandan), and night VFR (yejian fuza) conditions as flying in different types of weather conditions (qixiang feixing). For example, flying in day and night VFR and day IFR is referred to as flying in "three weather conditions" (sanzhong qixiang).

Korean war. The FEAf lost 1041 aircraft of which 147 were from air-to-air combat and 816 were from AAA fire. U.S. Air Force data also states that during the 1958 crisis there were 25 air-to-air engagements from August 23 to October 6. Nationalist pilots destroyed 32 aircraft, downed probably three more and damaged ten. Nationalist forces lost four of their own aircraft.

AVIATION TROOPS TODAY

A typical air division headquarters consists of the command staff and administrative organization. These people/organizations are responsible for combat and training, political training, supply, and maintenance support for the division. Each division and regiment has a Party Committee and a Standing Committee, of which the political commissar is the secretary. The Standing Committee consists of the command staff, and the Party Committee consists of the Standing Committee plus the commanders and political commissars of each subordinate regiment.

COMMAND STAFF

The command staff at a typical air division consists of the following personnel:

<u>Position</u>	<u>Rank</u>
Commander	Sr Col
Political commissar	Sr Col
Deputy commanders (2)	Sr Col/Col
Deputy political commissar (None)	
Chief of staff (Director, Headquarters Dept)	Col
Deputy chiefs of staff (1-2)	Col
Director, Political Department	Col
Director, Field Station	Col
Director, Aircraft Maintenance Division	Col

The command staff at a typical air regiment consist of the following personnel:

Position

Commander
Political Commissar
Deputy Commander(s)
Chief of Staff (Director, Headquarters Department)
Director, Political Division
Director, Field Station
Director, Aircraft Maintenance Group

Each air division and air regiment has a Party Committee (dangwei) and Party Standing Committee (dangwei changwei). The Standing Committee consists of the command staff, and the Party Committee consists of the Standing Committee plus the commander and political commissar/instructor from each subordinate unit.

ADMINISTRATIVE STRUCTURE

The administrative structure at an air division headquarters has four main elements as shown in Figure 1. Subordinate elements within them are either offices (ke), branches (gu), or sections (zu).

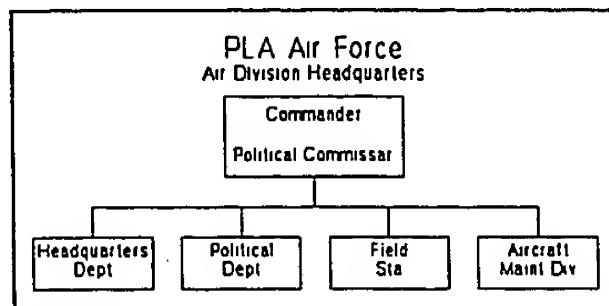


Figure 1

Headquarters Department (siling bu)

Political Department (zhengzhi bu)

Propaganda Office (xuanchuan ke)

Field Station (chang zhan)

Aircraft Maintenance Division (jiwu chu/gongcheng jiwu chu)

The administrative structure at an air regiment has the four main elements as shown in Figure 2.

OPERATIONAL STRUCTURE

An air division normally has two to three flying regiments (feixing tuan), and if the regiments are located at different airfields, each airfield has a field station (chang zhan) for logistics support. Some flying academies have four regiments. The flying regiment, which has a set number of 25-32 aircraft (but may actually have more or less assigned), is the basic organization for training and operations (Figure 3). Each regiment has three flying groups (feixing dadui), which are numbered the 1st through the 3rd, and one Aircraft Maintenance Group (jiwu dadui). Each flying group has three flying squadrons (feixing zhongdui).

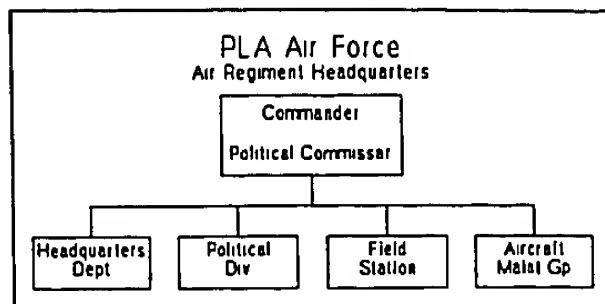


Figure 2

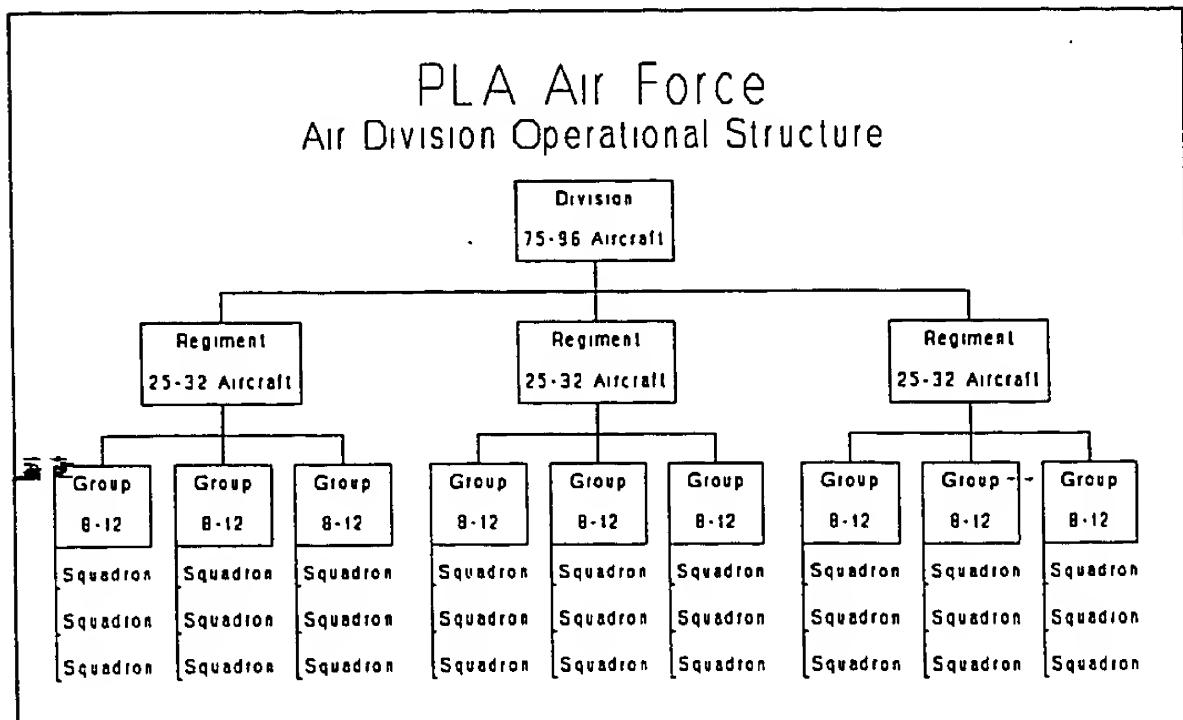


Figure 3

The division has about an equal number of pilots and aircraft, and each pilot only flies the aircraft assigned to his squadron (2-3 aircraft). The average pilot's education level is a college graduate, which is usually earned at a PLAAF flying academy (feixing xueyuan), and they have no set commitment after completing pilot training. However, the PLAAF established age limits for its pilots in the 1980s -- fighter and ground attack pilots (43-45 years); bomber pilots (48-50 years); transport pilots (55 years); helicopter pilots (47-50 years); and female pilots (48 years). The average age of fighter and ground attack pilots is 28 years.

LOGISTICS

The field station (chang zhan) is an independent logistics support unit under dual leadership of the air division and the MRAF Headquarters. Prior to February 1970, the field station was called a base (jidi), and had the status of a division. Today, however, it has the status of a regiment. The field station is responsible for organizing and supplying material and equipment, and also for providing continuous combined service support for operations and training. A field station at an airfield supporting two fighter regiments has about 930 personnel, including 170 officers and 760 airmen. Each airfield housing aircraft assigned to the division has its own field station. The officers are graduates of PLAAF colleges and technical schools. The field station is organized into a command staff, Party Committee, administrative structure (Figure 4), and support companies as follows:

Command Staff

- Director (zhanzhang)
- Political Commissar
- Chief of Staff
- Director, Political Division

The field station has a Party Committee (dangwei) and a Party Standing Committee (dangwei changwei). The Standing Committee consists of the command staff, and the Party Committee consists of the Standing Committee plus the senior field station personnel.

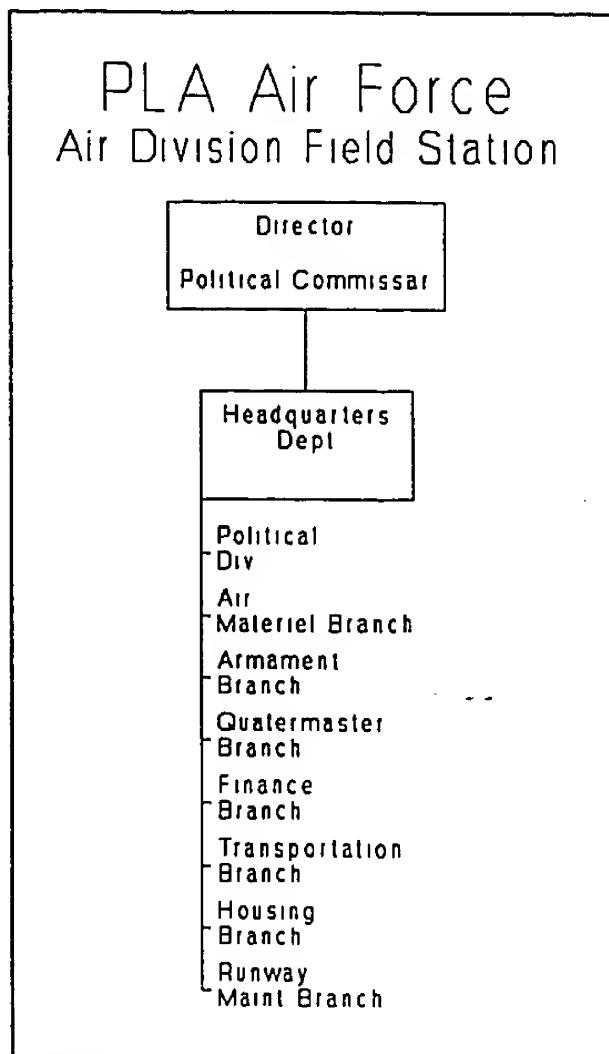


Figure 4

Administrative Structure

Headquarters Department (siling bu)

Political Division (zhengzhi chu)

Air Materiel Branch (hangcai gu)

Armament Branch (junxie gu)

Quartermaster Branch (junxu gu)

Finance Branch (caiwu gu)

Transportation Branch (yunshu gu)

Housing Branch (yingfang gu)

Runway Maintenance Branch (xiujian gu)

Support Companies

Each airfield has thirteen companies (lian), including the seven shown below.

The Vehicle Company (jichang qiche lian) has several types of vehicles to perform various jobs.

- There are three types of fuel vehicles (you che), which constitute the largest number of vehicles in the company. Most of them are huanghe (Yellow River) or jiefang (liberation) type trucks, including fuel transport trucks (yunyou che) that take fuel from the depot to the airfield; fuel pump trucks (chouyou che) that pump the remaining fuel from aircraft tanks and puts it in a fuel truck; aviation fuel trucks (hangkong qiyu che) of which there is usually one per company.
- There are three kinds of tow trucks (qianyin che), including large type (daxing) imported trucks used for towing long range bombers, large transports, and passenger aircraft; medium type (zhongxing jiefang CA 30 and dongfang 140) trucks used for towing medium range bombers; and small type (xiaoxing) used at fighter bases.
- Each ambulance (jiuhu che) has one doctor and one nurse.

- Emergency trucks (yingji che) are the same as the tow trucks but they have a tow bar attached, along with various emergency spare parts.
- Parachute trucks (san che) take landing chutes and chute personnel (baosan yuan) between the aircraft and the chute room (baosan shi).
- Control vehicles (zihui che), most of which are jeeps today, take controllers, flight dispatchers, and weather personnel around the airfield.
- Transport trucks (yunshu che) transport logistics materials and personnel.
- There are also cranes (diao che), fuel trucks (qiyou che), and passenger vehicles.
- Aviation troops also have other vehicles that are assigned to companies other than the vehicle company, such as fire trucks (xiaofang che), snow blowers (chuixue che), heating trucks (diaowen che), radar trucks (leida che), search light trucks (tanzhao deng che), air materiel trucks (hangcai che), auxiliary fuel trucks (fuyou che), AC/DC electric vehicles (zhiliu/jiaoliu dianyuan che), and engineering trucks (gongcheng che).

Instrument Company (qizhan lian)

Field Service Company (changwu lian)

Communications Company (tongxin lian)

Four Stations Support Company (sizhan qinwu lian/sizhan lian). Each station (zhan), which is equivalent to a platoon (paiji), has a director (zhanzhang) and 4-5 personnel.

Oxygen Station (zhiyang zhan)

Oxygen Charging Station (changyang zhan)

Compressed Air Station (lengqi zhan)

Electricity Charging Station (chongdian zhan)

Security Company (jingwei lian)

Fuel Transport Company (yunyou lian)

Health Team (weisheng dui)

AIRCRAFT MAINTENANCE

The director of aircraft maintenance (jiwu chu chuzhang) is responsible for engineering maintenance support. The repair shops have about 85 people, including 20 officers and 65 airmen. The officers have college or technical school degrees, and are classified as assistant engineers or above, technicians, or skilled personnel. The enlisted airmen are trained in aircraft maintenance training regiments (jiwu xunlian tuan), such as the one in the Nanjing MRAF.

The air division's aircraft maintenance workshops/backshops (xiuli chang) are responsible for intermediate repair of the division's aircraft and periodic inspections (under 400 hours for fighters), general malfunction repair and overall repair, specialized parts inspection and repair, and repairing of certain spare parts. All the technical equipment for maintenance is organized into ground equipment and instruments, plus instruments and equipment onboard engineering vehicles. A typical repair shop department (chang bu) is organized as shown in Figure 5:

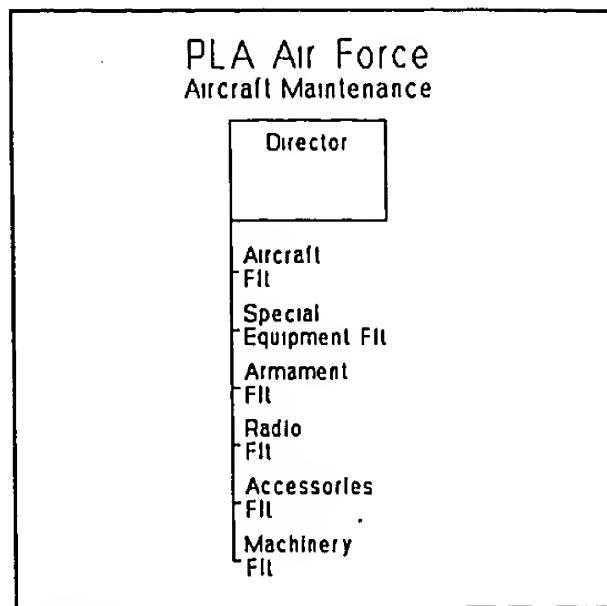


Figure 5

Aircraft Flight (feiji fendui)

Assembly Section (zhuangbei zu)

Metal Work Section (baitie zu)

Special Equipment Flight (teshe fendui)

Electrical/Avionics Section (dianzi zu)

Instruments Section (yibiao zu)

Armament Flight (junxie fendui)

In House Repair Section (shinei zu)

Out House/Periodic Repair Section (shiwai zu)

Radio Flight (wuxiandian fendui)

Communications/Navigation Section (tianxian zu)

Radar Section (leida zu)

Accessories Flight (fujian fendui)

Hydraulics Section (yeya zu)

Compressed Air Section (lengqi zu)

Inspection, Non-destructive Section (tanshang zu)

Machinery Flight (jijia fendui)

Lathe Section (chegong zu)

Heat Treatment Section (redian gong zu)

Welding Section (hangong zu)

Benchwork Section (qiangong zu)

Milling and Grinding Section (xibaomo zu)

The Aircraft Maintenance Group (jiwu dadui) has about 350 people, including 90 officers and 260 airmen. The officers are college or technical school graduates, and are classified as assistant engineers or above, technicians, or skilled personnel. The Aircraft Maintenance Group performs flight line maintenance on the division/regiment's aircraft. For example, an A-5 requires about 40 hours of maintenance for each flying hour.

The Cultural Revolution created several maintenance problems for the Air Force. For example, quality control measures for the F-6-3, Zhi-5 helicopter, and A-5 completely broke down during their development, forcing the Military Commission to order factory recalls for all of these aircraft in November 1975. In addition, PLAAF A-5, F-6, and F-7 aircraft have had a very serious problem with hydraulic system contamination. Whereas the U.S. Air Force

uses the NAS-1638 standard, which allows for a 7-8 level for hydraulic system contamination, the PLAAF, using this standard, has an average of 9-12. Several examples are as follows:

- From 1979 through 1985, the PLAAF had a total of 1,894 A-5 ground attack aircraft malfunctions, of which 42 percent were hydraulic system malfunctions.
- From 1978 through 1981, the PLAAF had a total of 965 F-6 malfunctions, of which 28.7 Percent were hydraulic system malfunctions.
- From 1979 through 1983, the PLAAF had a total of 272 F-7 malfunctions, of which 30 percent were hydraulic system malfunctions.
- In 1986, hydraulic system malfunctions accounted for 42.3 percent of the F-6 and 71.4 percent of the F-7 malfunctions in the Jinan MR. In 1987, this represented 43 percent of all malfunctions in the Jinan MR.
- In 1987, the Shenyang MR had 591 F-6 hydraulic system malfunctions, which was 46 percent of all Shenyang MR F-6 malfunctions. In addition, 23 hydraulic pumps were changed.
- From 1966 through 1985, hydraulic system malfunctions comprised 36 percent of all malfunctions in the Guangzhou MR.
- Hydraulic system malfunctions averaged 24 percent over several years for one F-7-2 unit, with a high of 43 percent in 1983.

Figure 6 shows a typical Aircraft Maintenance Group, which is organized into four squadrons (zhongdui).

First Squadron



Radar Flight (leida fendui)

Machinery Flight (jixie fendui)

Armament Flight (junxie fendui)

Special Equipment Flight (teshe fendui)

Radio Flight (wuxiandian fendui)

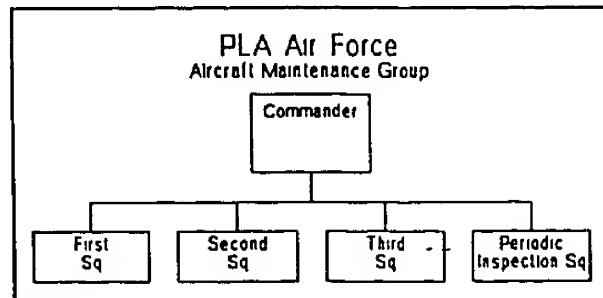


Figure 6

Second Squadron

Machinery Flight (jixie fendui)

Armament Flight (junxie fendui)

Special Equipment Flight (teshe fendui)

Radio Flight (wuxiandian fendui)

Third Squadron

Primary Fighter Machinery Flight (chuji jixie fendui)

FT-6 Trainer Machinery Flight (qianjiao 6 jixie fendui)

Armament Flight (junxie fendui)

Special Equipment Flight (teshe fendui)

Radio Flight (wuxiandian fendui)

Periodic Inspection Squadron (dingjian zhongdui)

Machinery Flight (jixie fendui)

Armament Flight (junxie fendui)

Special Equipment Flight (teshe fendui)

Radio Flight (wuxiandian fendui)

Repair Flight (xiuli fendui)

SECTION 14

AIR DEFENSE (AAA & SAM) TROOPS

Until the PLA Air Force (kongjun), which consisted primarily of aviation troops (hangkong bing), and the PLA Air Defense Force (fangkongjun), which was mainly composed of antiaircraft artillery (AAA) troops (gaoshepao bing/gaopao bing) and radar troops (leida bing), merged in 1957, they shared the air defense mission. In 1958, the PLAAF added surface-to-air missile (SAM) troops (dikong daodan bing) to its air defense mission. Due to historical and security reasons, AAA troops have sometimes been referred to as yipao (first artillery) and SAM troops as erpao (second artillery). Also for security reasons, SAMs became the responsibility of a separate HqAF Technical Department (jishu bu), instead of a calling it a SAM Department. The Technical Department was later merged into the AAA Department (gaopao bu).

Although the PLAAF absorbed the ADF's air defense mission in 1957, there still appears to be an administrative and functional separation of aviation (aircraft) and air defense (AAA and SAM) assets. For example, one of the four deputy commanders at HqAF is responsible for operations (aviation) and one is responsible for air defense (AAA and SAM), while one of the four deputy chiefs of staff in the Headquarters Department is responsible for operations and one is responsible for air defense. In addition, the Operations Department within the Headquarters Department is primarily responsible for aviation and the AAA Department is responsible for air defense. There are also separations within the MRAFs.

AIR DEFENSE FORCE HISTORY

In order to protect Beijing, the Huabei Military Region (MR) established the Ping-Jin (Beiping-Tianjin) Garrison Headquarters (weishu fangkong siling bu) in April 1949, with Nie Rongzhen as the Commander and Bo Yibo as the Political Commissar. On 23 April, the Nanjing Air Defense Headquarters (fangkong siling bu) was established, and in July, the Shanghai Garrison Headquarters established a Shanghai Air Defense Division (fangkong chu).

As more cities were liberated, the PLA's eight field AAA regiments became responsible for their air defense. The first AAA group (dadui) was formed in November 1945 in Liaoning Province. By August 1949, there were eight AAA regiments, but the PLA bought enough AAA from the Soviet Union to form ten more regiments. Later, the 6th AAA Regiment became the Air Defense School's (fangkong xuexiao) training unit, and the 8th AAA Regiment merged with the 12th Regiment. So, by the end of 1949, there were 16 AAA regiments, located in Shenyang, Anshan, Fushun, Beijing, Shanghai, Nanjing, Qishuyan, Wuhan, and Changsha.

In March 1950, the Shanghai Air Defense Headquarters (fangkong siling bu) was established. In April, the Shanghai Air Defense Command Post (fangkong zhihuisuo) was

formed, with subordinate fighter, AAA, searchlight (tanzhao deng), and antiaircraft reporting (duikong qingbao) command offices (zhihuishi). Between May and September, a radar element was established, then expanded to a radar battalion. In August, a searchlight regiment was established.

Between March-May 1950, three AAA divisions were established to control the AAA Regiment. The 1st AAA Division was organized in Wuhan, with its subordinate 1st, 2nd, 3rd, and 9th Regiments stationed in the Leizhou Peninsula, Guangzhou, and Wuhan. The 2nd AAA Division was formed in Shenyang, with the subordinate 4th and 5th Regiments stationed in Shenyang, Anshan, and Xiaofengman. The 3rd AAA Division was established in Shanghai, with the subordinate 11th, 14th, 17th, and 18th Regiments, all of which were stationed Shanghai.

On 23 October 1950, the PLA Air Defense Headquarters (fangkong siling bu) was formally established with Zhou Shidi as the Commander and Zhong Chibing as the Political Commissar. At this time, there were two AAA divisions (the 2nd had changed to the Dongbei MR Air Defense Headquarters/ junqu fangkong siling bu), 16 AAA regiments, one searchlight regiment, two radar battalions, and one aircraft observation battalion (duikong jianshi ying). Shortly thereafter, there were four MR Air Defense Headquarters (Huadong, Huabei, Dongbei, and Zhongnan). In addition, command organizations for the Xinan MR Air Defense Division (fangkong chu), the Andong and Xiaofengman Air Defense Headquarters, the Zhejiang and Fujian Air Defense Divisions, and the Nanjing, Tianjin, Wuhan, and Nanchang Air Defense Command Posts (fangkong zhihuisuo) were formed.

From the beginning of the Korean War until July 1953, the Air Defense Troops had the following units:

- Two AAA divisions (the 101st and 102nd)
- The 1st AAA Division became the Zhongnan MR Air Defense Headquarters
- The 3rd AAA Division became a Field AAA Division
- 33 AAA regiments
- 8 independent AAA battalions
- 4 searchlight regiment
 - 1 radar regiment
 - 8 radar battalions
 - 17 aircraft observation battalions

The AAA Academy (gaopao xueyuan) opened in 1952 in Shanghai (it was only a school/xuexiao at that time). It closed down for a period of time, and then re-opened in 1978 in Guilin. The students study for two years, and are then sent to an operational unit for one

year of training before they receive their commission. The academy had 1,100 students in 1988. In addition, the following Air Defense schools were established:

- Advanced Air Defense School (gaoji fangkong xuexiao)
- Air Defense School (fangkong xuexiao)
- Radar School (leida xuexiao)
- Maintenance School (jishu xuexiao)
- Three Preparatory Schools (yubei xuexiao)

In March 1955, Yang Chengwu became Commander of the Air Defense Troops. In August 1955, the PLA Air Defense Troops (fangkong budui) became the PLA Air Defense Force (ADF/fangkongjun), and the PLA Air Defense Headquarters (fangkong siling bu) became the PLA Air Defense Force Headquarters (fangkongjun siling bu). From this point on, the ADF became a service (junzhong) equivalent to the Air Force and Navy.

By May 1957, when the ADF and PLAAF merged, the ADF had the following units:

- Shenyang, Beijing, Nanjing, and Guangzhou MR Air Defense Headquarters
- 1 ADF Corps (fangkongjun diyi jun) formed in Fuzhou in September 1955
- 8 Schools
- AAA troops
- Searchlight troops
- Aircraft reporting troops
- 149,000 personnel

THE PLAAF AFTER MAY 1957

When the PLAAF and ADF merged, the new PLAAF leadership incorporated members of both forces as follows:

- Commander		
	Liu Yalou (PLAAF)	0491/0068/2869
■ Political Commissar		
	Wu Faxian (PLAAF)	0702/3127/2009
- Deputy Commanders		
	Wang Bingzhang (PLAAF)	3769/4426/3864
	Liu Zhen (PLAAF)	0491/7201
	Cheng Jun (ADF)	2052/6874
	Cao Lihuai (PLAAF)	2580/6849/2037
	Tan Jiashu (ADF)	6223/1367/6615
	Chang Qiankun (PLAAF)	1603/0051/0981
	Xu Shenji (PLAAF)	1776/3234/0679

Based on the initial decision to have the PLAAF and ADF merge, the following organizational changes took place:

- The command organization and troops of the ADF's AAA troops, searchlight troops, and aircraft reporting troops were kept in tact
- The PLAAF's radar flights (fendui) and the ADF's aircraft reporting troops were merged
- Administrative elements with similar functions were combined
- Air Defense Command Posts (fangkong zhihuisuo) at each PLAAF and ADF level were merged into a unified Air Defense Operations Command Post (fangkong zuozhan zhihuisuo)
- Each of the ADF's schools were kept in tact

Following the 1957 merger and the addition of the SAM Troops in 1958, the PLAAF's air defense structure consisted of the following branches (bingzhong):

- Aviation Troops included fighters, bombers, reconnaissance aircraft, transports and each type of specialized aviation troop units. From the end of the Korean War to 1957, a portion of the existing air divisions expanded from two to three regiments. From 1960-1965, more air divisions were created to guard the coast, and from 1966-1976, aviation troop units were expanded to cover the rest of China.
- At the time of the PLAAF-ADF merger, the PLAAF's AAA Troops already had 11 AAA divisions. In 1958, one of the AAA division's headquarters changed to a SAM training base. From 1959 to 1975, the number of AAA units expanded; however, there was a fairly large reduction in 1975.
- The PLAAF's SAM Troops began when China received its first SA-2 missiles (five launchers and 62 missiles) from the Soviet Union in October 1958. The first batch of SAMs was organized into three battalions, consisting of people borrowed from the AAA, radar, aviation maintenance, and searchlight troops. The first SAM division was formed on 1 April 1964 as the 4th Independent AAA Division. In September 1958, a Special Weapons School (tezhong wuqi xuexiao) was organized in Baoding and called the 15th Aviation School (hangkong xuexiao). It was responsible for training all services on surface-to-surface, surface-to-air, and shore-to-ship missile maintenance. In 1963, however, this school became responsible only for training SAM commanders, maintenance, and construction. Today, the SAM Academy is in Sanyuan, Shaanxi Province.

- After the 1957 merger, the Aircraft Reporting Troops (duikong qingbao bing) changed their name to PLAAF Radar Troops (kongjun leida bing), and became a PLAAF branch. The PLAAF's original radar flights (leida fendui) became subordinate to the radar regiments.

COMBINED BRIGADES

Since the late 1980s, the PLAAF has been in the process of restructuring its AAA and SAM forces by gradually turning over most of the AAA (37 and 57 mm) to the Army, and by combining some of the remaining AAA regiments with SAM regiments into combined brigades (huncheng lu). So far, combined brigades have been noted in every MRAF except the Jinan MRAF. However, the Jinan MRAF does have at least one SAM regiment.

As part of the restructuring process, all active duty SAM and AAA divisions (shi) have been abolished, and at least one SAM brigade without any AAA has been established in the Beijing MRAF and one in the Shenyang MRAF. In addition, there are still some SAM regiments which have not been combined into brigades. The AAA units that are not being combined with SAM's or have not been turned over to the Army will be used for deployment purposes. Although there are no longer any active duty AAA divisions, the PLAAF still has some reserve AAA divisions (yubeiyi gaopao shi), which apparently are the only Air Force reserve units. The reserve division(s) took part in a live fire exercise for the first time in September 1990.

COMMAND STAFF

The command staff for a combined brigade and SAM brigade consists of the following personnel:

- Commander
- Political commissar
- 1-2 Deputy commanders
- 1 Deputy political commissar
- ~~- Chief of staff (Director, Headquarters Department)~~
- Director, Political Department
- Director, Logistics Department
- Director, Maintenance Departments

While the brigade's Standing Committee (dangwei changwei) consists of the command staff, the Party Committee (dangwei) consists of the Standing Committee plus the commander and political instructor of each subordinate battalion. The Party Committee also has its own General Office (bangongshi).

The command staff for a typical AAA and SAM regiment consists of the following personnel:

- Commander
- Political commissar
- 1 Deputy commander
- ~~- Chief of staff (Director, Headquarters Department)~~
- Director, Political Division
- Director, Logistics Division
- Director, Maintenance Division

There is also a Party Committee and Standing Committee. While the Standing Committee consists of the command staff, the Party Committee consists of the Standing Committee plus the commander and political instructor of each subordinate battalion.

The command staff of a typical AAA and SAM battalion consists of at least the following personnel:

- Commander
- Political instructor
- 1-2 Deputy commanders

There is also a Party Committee and Standing Committee. While the Standing Committee consists of the command staff, the Party Committee consists of the Standing Committee plus the commander and political instructor of each subordinate unit.

ADMINISTRATIVE STRUCTURE

From 1949-1966, Headquarters Department within HqAF had a subordinate AAA Command Department (gaopao zihui bu), which was responsible for AAA. When the PLAAF received its first SAMs in 1958, a Technical Department (jishu bu) was added and became responsible for SAMs. The name Technical Department was used instead of SAM Department for security reasons. Although the Technical Department was soon merged with the AAA Command Department, they split again in 1966 and SAMs came under the Second AAA Command Department (dier gaoshepao bing zihui bu). Still later, they merged again, so that today the AAA Department (gaopao bu) within the Headquarters Department at HqAF is administratively responsible for AAA and SAMs.

Within each MRAF Headquarters, Command Post, and Air Corps, there is a AAA/SAM Division (gaopao daodan chu) or AAA Division (gaopao chu) that is primarily responsible for the day-to-day AAA and SAM technical matters. At the combined brigade level, the brigade works with the next higher level's Operations Division/Department for operational matters, and with the respective Logistics and Training Divisions/Departments for those aspects.

Today, the administrative organization within a combined brigade and SAM brigade consists of a Headquarters Department (siling bu) Political Department (zhengzhi bu), Logistics Department (houqin bu), and Maintenance Department (jishu bu) (Figure 1). The Political Department has at least one deputy director. Meanwhile, the headquarters within the remaining AAA and SAM regiments is organized into a Headquarters Department (siling bu), Political Division (zhengzhi chu), Logistics Division (houqin chu), and Maintenance Division (jishu chu) (Figure 2). The second level elements within the brigade headquarters are offices (ke). For example, the Political Department has a Cadre/Personnel Office (ganbu ke).

One of the differences between aviation and air defense troops is the maintenance structure. Whereas the Aeronautical Engineering Department (hangkong gongcheng bu) at the HqAF, MRAF, and Air Corps level, and the Aircraft Maintenance Division (jiwu chu) at the Command Post level, is responsible for aircraft maintenance (jiwu), the Logistics Department's (houqin bu) Armament Department/ Division (junxie bu/chu) at these levels is responsible for AAA, SAM, communications, and radar maintenance (jishu). At the non-aviation brigade and regiment level, the Maintenance Department and Division (jishu bu/chu), respectively, are separate first level administrative entities from the Logistics Department and Division (houqin bu/chu); however, they are still responsible to the next higher headquarter's Logistics Department's Armament Division/Office and work closely with the brigade/regiment's Logistics Department/ Division.

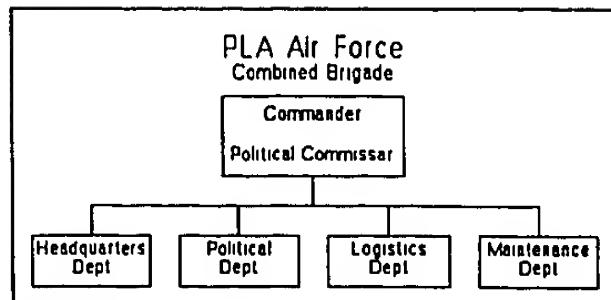


Figure 1

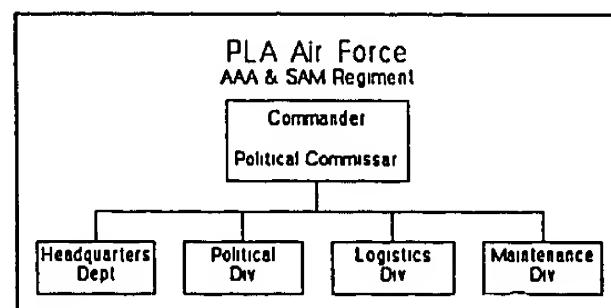


Figure 2

For example, when a piece of equipment at a AAA, SAM, radar or communications unit needs maintenance, the Armament Office (junxie ke) within the brigade's Logistics Department initiates a tasker and passes it through the Maintenance Department's Repair Office (xiuli ke) to the Repair Flight (xiuli fendui), which then repairs the system. At the regiment level, the Armament Branch (junxie gu) within the regiment's Logistics Division initiates the maintenance task and passes it through the Maintenance Division's Repair Branch (xiuli gu) to the Repair Flight (Figure 3). At the battalion level, there is a Maintenance Section (jishu zu), and at the company level there is a Maintenance Unit (jishu fendui).

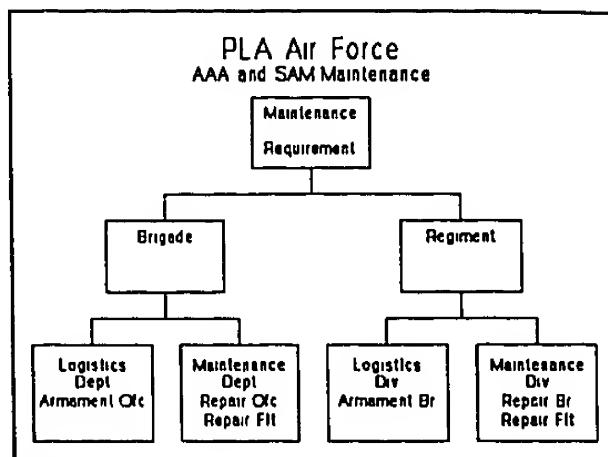


Figure 3

OPERATIONAL STRUCTURE

Prior to the 1985 Military Region reorganization, AAA and SAM units were organized separately into divisions (shi) or independent regiments (tuan). Each independent regiment also had the status of a division (shiji). Each division had subordinate regiments (tuan), battalions (ying), companies (lian), platoons (pai), and squads (ban). Each independent regiment also had battalions, companies, platoons, and squads. Following the reorganization, however, the division level and their subordinate regiments were abolished and their AAA and SAM assets were merged into combined brigades, so that the chain of command now goes directly from the brigade to the battalion. Each brigade now has 5-6 battalions, including 2-3 AAA and 2-3 SAM battalions, plus their subordinate companies, platoons, and squads.

As for the remaining independent regiments, each SAM regiment has 1-3 battalions, and each battalion has six launchers plus various support companies, such as command and control, logistics, maintenance, and radar companies. As for the AAA regiments, each regiment has 2-3 battalions, each battalion has 3-5 companies (minimum of 3), each company has three AAA squads plus support (vehicle, maintenance, logistics, etc.) squads, each squad has 3-6 platoons, and each platoon has one AAA piece.

Each brigade and regiment has a command post (zhihuisuo), best translated as a command center, within the Headquarters Department which is staffed by at least one representative from each of the second-level administrative elements.

SECTION 15

RADAR TROOPS

The first radar battalion was established in April 1950 in Nanjing, but was called a Telecommunications Group (dianxun dadui) for security purposes. The group had five squadrons (zhongdui). The second battalion was established in Shanghai as part of the Shanghai Air Defense Headquarters (fangkong siling bu) in May 1950. The first radar regiment was formed in 1955, and the name Radar Troops (leida bing) became official on 26 July 1957, and the radar troops became a PLAAF branch (bingzhong).

Once the PLA Air Defense Force (ADF/fangkongjun) was established in December 1950, radar units were divided into two types. Those subordinate to the ADF were responsible for early warning, and those subordinate to the PLAAF were responsible for directly supporting aviation units.

Initially, ADF warning radar sites (jingjie leida zhan) reported the information to a battalion station (ying zhan) or a regimental station (tuan zhan). Once the information was synthesized, it was forwarded to the Military Region ADF Headquarters General Station (junqu fangkong bu zong fenzhan). Finally, the General Station reported the information to the appropriate unit. At that time, all of the PLAAF's radar sites were subordinate to the Communications Department (tongxin bu), which was a first level administrative department within HqAF.

Shortly after the PLAAF and ADF merged in 1957, the HqAF Aircraft Reporting Command Department (duikong qingbao bing zihui bu) was renamed the Radar Department (leida bing bu) and was directly subordinated to the PLAAF commander. In addition, the MRAF Headquarters Department's Aircraft Reporting Command Division (zihui chu) was also renamed the Radar Department (leida bing bu) and became directly subordinate to the MRAF commander.

In 1959, radar sites (leida zhan) were established as the basic unit, while regiments became the highest unit. At that time, the sites and regiments either had a Reporting Battalion Headquarters (qingbao ying bu) or an Administrative Battalion Headquarters (guanli ying bu) between them, depending upon the situation. As a result, the radar organization had either a three level (regiment-battalion-site) or a two level (regiment-site) structure. In the early 1960s, this changed so that there was only a three level structure.

Today, Radar Troops are organized into regiments (tuan), battalions (ying), and companies/sites (lian/zhan). Each regiment has various battalions, including one reporting battalion (qingbao ying) and up to 20 radar companies/sites. Each company/site has 2-3 radars and 20 personnel (officers and enlisted) assigned. For example, one company near the Sino-Soviet border reported 39,705 groups (pi) and 45,539 sorties (jiaci) in 1988.

Radar Troop training takes place at the PLAAF Radar Academy (leida xueyuan) in Wuhan or at Radar Troop Training Groups (leida bing xunlian tuan). The Radar Academy had graduated over 7,800 cadets by the end of 1987, and there were 510 cadets in the 1989 and 500 in the 1990 graduating class. Training is for three years, and the cadets must serve one year in a unit before they receive their commission. In addition, over 1200 technicians and platoon commanders (paizhang) had been trained at MRAF training units, such as the training group in the Chengdu MRAF, by the end of 1987. The Lanzhou MRAF also has a radar training group.

COMMAND STAFF

The regiments apparently have the status of independent regiments, and are therefore equal in status to a division (shiji). A radar regiment's command staff consists of the following personnel:

- Commander
- Political commissar
- Deputy commander(s)
- Chief of staff (Director, Headquarters Department)
- Director, Political Division
- Director, Logistics Division
- Director, Maintenance Division

The regiment also has a Party Committee (dangwei) and Party Standing Committee (dangwei changwei), of which the political commissar is the secretary. The Standing Committee consists of the command staff, and the Party Committee includes the command staff plus the commander and political director of each subordinate battalion.

ADMINISTRATIVE STRUCTURE

The regiment's administrative organization consists of a Headquarters Department (siling bu), Political Division (zhengzhi chu), Logistics Division (houqin chu), and a Maintenance Division (jishu chu). Although the Maintenance Division is equal to the Logistics Division at the regiment level, but works for the higher headquarter's Logistics Department. Each of the divisions have subordinate branches (gu). For example, the Logistics Division has a Quartermaster Branch (junxu gu), and the Political Division has a Propaganda Branch (xuanchuan gu).

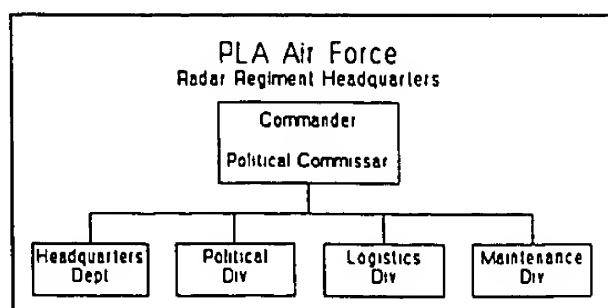


Figure 1

OPERATIONAL STRUCTURE

Radar regiments are subordinate to the Radar Division (leida chu) within the next higher headquarters level for day-to-day technical matters, to the Operations Division (zuozhan chu) for operational matters, and to the training and logistics elements for those functions.

Within each radar regiment's Headquarters Department there is a Command Post (zhihuisuo), which is best translated as an operations centers. The Command Post is separate from the operations element and comes under the chief of staff. There is at least one representative from each of the second-level administrative elements within each of the four first-level departments/ divisions who man the Command Post. Each subordinate operational unit also has a Command Post.

When a radar unit tracks an aircraft, the unit passes the information up two separate chains. The first chain is to the command post at HqAF through the radar unit's next higher command post, whether that next higher level is the regiment, an MRAF Headquarters, an Air Corps, or a Command Post such as the Tangshan Command Post. At the same time that the info is going to HqAF, it is being sent directly to the General Staff Department's command post.

SECTION 16

COMMUNICATIONS TROOPS

PLAAF communications consists primarily of communications and navigation aids. Communications Troops (tongxin bing) are organized into administrative elements, as well as regiments (tuan), battalions (ying), stations (zhan), companies (lian), teams (dui), equipment repair factories (qicai xiupai chang), and equipment warehouses (qicai cangku).

The PLAAF Communications School was established in September 1957. The Communications Engineering Academy (tongxun gongcheng xueyuan) in Xian is a four year school, where cadets graduate with an undergraduate degree (benke) in military science (junshixue xueshi). The 1990 freshman class had 1300 cadets.

The Beijing MRAF has an annual communications competition in December, which consists of ten events. Preliminary competition takes place in September or October.

COMMAND STAFF

The command staff at a communications regiment has at least the following personnel:

- Commander
- Political commissar
- Chief of staff (Director, Headquarters Department)
- Director, Political Division
- Director, Logistics Division

The regiment also has a Party Committee (dangwei) and Party Standing Committee (dangwei changwei). The Standing Committee consists of the command staff, and the Party Committee consists of the command staff plus the commander and political director of each subordinate battalion.

ADMINISTRATIVE STRUCTURE

The regiment's administrative organization consists of a Headquarters Department (siling bu), Political Division (zhengzhi chu), and Logistics Division (houqin chu). Unlike radar, SAM, and AAA regiments, which have a separate Maintenance Division (jishu chu), the

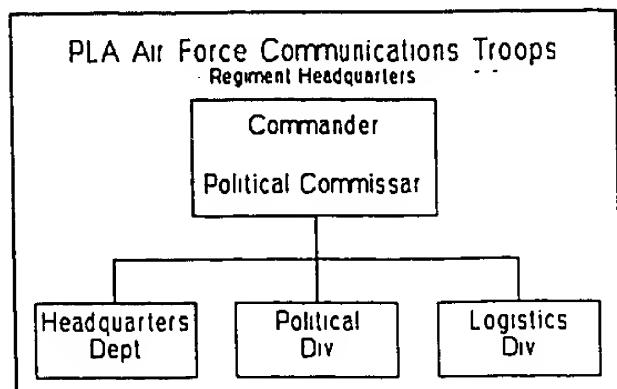


Figure 1

communications regiment's Logistics Division is responsible for maintenance. A typical communications regiment consists of about 1600 personnel.

OPERATIONAL STRUCTURE

Each MRAF Headquarters has a communications battalion and subordinate transmitter company. The battalion also has subordinate receiver companies (shouxi lian), each of which has operator platoons (baowu pai). Each operator has one ximenzi type 1000 transmitter, which is networked to a receiver company at an Air Corps, Air Division, or supply station.

A network consists of two ximenzi type 1000 transmitters, two type 74 receivers, and two 400 watt type 74 transmitter. The most commonly used antenna is the "II type." Since 1955, all the radio operators have been enlisted troops. The majority of the female airmen are in the communications or medical fields.

The General Headquarters (tongshuai bu) establishes a strategic warning network, and the Front Army (fangmian jun) establishes a warning network in the war zone to relay warning signals from the General Headquarters and to transmit regionalized warnings. Air intelligence reports originate with the Group Army (jituan jun) of the Front Army's PLAAF organization and are disseminated to SAM and AAA battalions and above, as well as to other required units, who have receiver stations.

In order to support ground troops, the PLAAF deploys Operations Teams (zuozhan xiaozu) and Target Controller Teams (mubiao yindao zu) to Army units, such as a Group Army. Radio communications between the PLAAF and these units is accomplished through radio stations set up by these two teams.

Radio communications between Air Force and ground force units can also be made by the relevant, higher Air Force and Army authorities using a radio network designed for such communications. Landline communications can also be used by the Army to communicate in a direct line to the Air Force, or messages can be relayed through a base command station.

PLAAF landline communications consists of the following jobs and offices:

- Line Maintenance Personnel (peixian yuan) work in the Maintenance Office (peixian shi), which is the standard name for what is commonly referred to as the Malfunction Desk (guzhang tai). When an old telephone malfunctions, the Maintenance Offices' "measurement desk" (celiang tai) analyzes the problem, then sends a maintenance person from the Maintenance Office's Telephone Squad (dianhua ban) and Cable Squad (dianlan ban) to fix it.

- Automatic Connecting Personnel (zidong jiexu Yuan). Carrier wave machines (zaiboji) and modern long distance communications equipment connect Beijing and Xinjiang, as well as the capital and Laoshan. Carrier wave communications has three superior qualities -- increased distance by using amplifiers and repeaters; more circuits; and security.
- Linesman (jiaxian yuan) string open wire telephone lines on poles. This type of landline communications is the primary means of communications between high level leaders, between Naval and Air Force bases, and between border positions.
- Telephone Operators (huawu yuan)
- Carrier Wave Operators (zaibo zhiji yuan) are responsible for maintenance, cleaning, and testing of the carrier wave equipment.
- Cable Personnel (dianlan yuan) are responsible for stringing underground and underwater communication cables.
- Facsimile Personnel (chuanzhen yuan) are responsible for sending all types of documents between headquarters organizations. Facsimiles are organized on special direction (zhuan xiang) or network directions (luo lu fangxiang).
- Teleprinter Personnel (dianchuan yuan) use electric typewriters to send messages using Arabic letters.
- Microcomputer Personnel (weiji yuan).

SECTION 17

AIRBORNE TROOPS

On 26 July 1950, the PLAAF's Airborne Troops (kongjiang bing) began when the Military Commission established the PLAAF 1st Marine Brigade (luzhan diyi lu) in Shanghai, using the Third Field Army's 9th bingtuan's 30th Army's (jun) 89th Division as a basis. On 1 August, the brigade's Headquarters moved to Kaifeng, Henan Province, and Kaifeng and Zhengzhou, Henan Province, were designated as the brigade's training bases. This brigade eventually became an airborne division (kongjiang bing shi). Thereafter, the unit's designation changed several times, becoming the Air Force Marine 1st Division (kongjun luzhan diyi shi), the Paratroops Division (sanbing shi), then the Airborne Division (kongjiang bing shi). In May 1961, the Military Commission changed the Army's 15th Army (15 jun), which had fought during the Korean War, into the PLAAF 15th Airborne Army (kongjun kongjiang bing di 15 jun), and subordinated the PLAAF's original airborne division to this new Army.

The Airborne Troops have various special units (tezhong fendui), including weapons controllers (yindao), reconnaissance (zhencha), infantry (bu bing), artillery (pao bing), communications (tongxin bing), engineering (gong bing), chemical defense (fanghua bing), and transportation (qiche bing) soldiers. Today, the Airborne Troops have three brigades, which are further divided into battalions (ying) and companies (lian).

<u>Brigade</u>	<u>City</u>	<u>Province</u>	<u>Military Region</u>	<u>Function</u>
43rd	Kaifeng	Henan	Jinan	Combat
44th	Yingshan	Hubei	Guangzhou	Training
45th	Huangpi	Hubei	Guangzhou	Combat

In October 1964, an aviation transport regiment was created to support the Airborne Troops. In December 1969, the first helicopter regiment was assigned to the airborne troops, and the number of personnel and equipment increased. In 1975, the airborne troops underwent a reduction in force, yet new types of weapons were introduced.

Paratroopers are recruited throughout China by special recruiting teams from the 44th Brigade. The new recruits are between the ages of 18-20. Most have at least a junior middle school education, but high school graduates are the goal. Recruits enlist for a minimum of four years, and may stay for up to six years. If they want to stay after six years, they must be selected as "leaders." Officers report for training at the brigade after having completed training at a military academy.

The Airborne Troops conduct training throughout China. For example, from July-August 1988, an airborne unit conducted training in the Kunlun Mountains and the Qinghai-Tibetan Plateau at 3000-5000 meters. The training consisted of paradrops, reconnaissance, harassing attacks, taking and keeping strong points, and testing Chinese-produced parachutes.

COMMAND STAFF

The 15th Airborne Army's command staff consists of the following personnel:

- Commander
- Political commissar
- Deputy commander(s)
- Deputy political commissar(s)
- Chief of staff (Director, Headquarters Department)
- Director, Political Department
- Director, Logistics Departments

These members also make up the Party Standing Committee (dangwei changwei). The Party Committee (dangwei) consists of the Standing Committee plus the commander and political commissar from each of the three brigades.

The command staff for each combat brigade consists of the following personnel:

- Commander
- Political commissar
- Deputy commander
- Chief of staff (Director, Headquarters Department)
- Director, Political Department
- Director, Logistics Division
- Director, Maintenance Division

Like the 15th Airborne Army, the Party Standing Committee at each brigade also consists of the command staff, and the Party Committee consists of the Standing Committee plus the commander and political instructor of each subordinate battalion.

ADMINISTRATIVE STRUCTURE

Although there are separate radar, communications, and air defense (AAA and SAM) administrative departments within the Headquarters Department at HqAF, there are no separate aviation or airborne departments. Like the aviation troops, however, the Operations Department (zuozhan bu) is responsible for administrative matters concerning the airborne troop operations. In addition, the Training Department (junxun bu) has an Airborne Division (kongjiang bing chu), which is responsible for airborne training matters. There are also other departments, such as the Equipment Department, which take care of their particular requirements for the airborne troops.

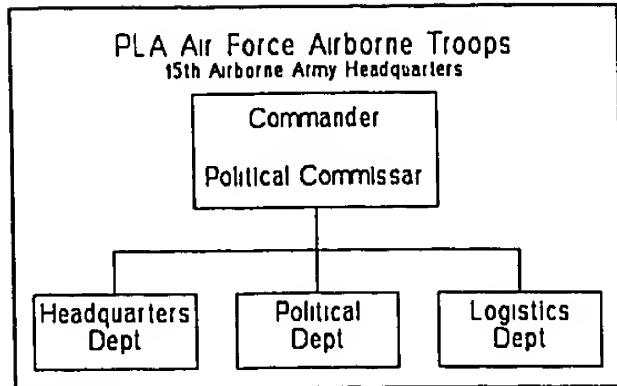


Figure 1

Administratively, the 15th Airborne Army has a Headquarters Department (siling bu), Political Department (zhengzhi bu), and Logistics Department (houqin bu) (Figure 1). At the brigade level, there is a Headquarters Department, Political Department, Logistics Division (houqin chu), and Maintenance Division (jishu chu) (Figure 2)

OPERATIONAL STRUCTURE

Operationally, the 15th Airborne Army works closely with other PLAAF branches. For example, during the 1979 border conflict with Vietnam, three of the 15th Airborne Army's light artillery battalions were subordinated to the PLAAF'S 19th AAA Division's 55th Regiment at Ningming.

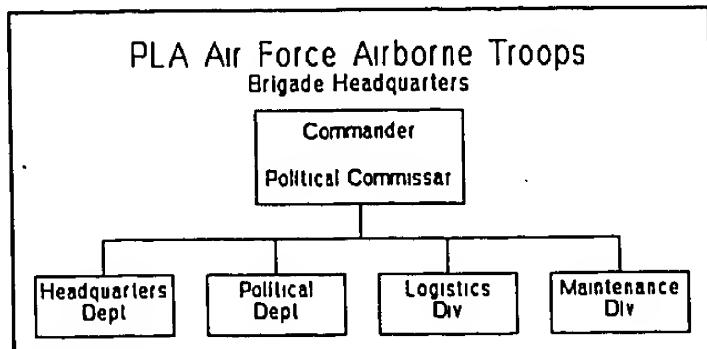


Figure 2

The Airborne Troops have also been used for internal purposes. For example, they were used in Wuhan during the Cultural Revolution. In addition, they were also used as a spearhead during the military crackdown on demonstrators in Tiananmen in June 1989.

SECTION 18

LOGISTICS TROOPS

The PLAAF's Logistics Department (houqin bu/konghou) was established in November 1949, and was based on the Fourth Field Army's 6th subdepartment. It is responsible for supply, as well as support for operations, training, and living. The PLAAF's logistics troops (houqin bing) are organized operationally to carry out the policies of the Logistics Department. Consequently, they are responsible to the HqAF Logistics Department and its subordinate offices at the MRAF, Air Corps, Command Post, and unit level. The Field Station (chang zhan) is the logistics organization at an aviation division/base. This section describes how various logistics units are organized today to perform their missions, and how the PLAAF's logistics elements performed during the 1979 Sino-Vietnamese border conflict.

LOGISTICS TROOPS TODAY

AIR MATERIEL DEPOTS: Looking at how the PLAAF's logistics troops are organized today, the air materiel organization at each level manages supply depots and warehouses, and orders the supplies. Supply depots are organized on a three tier structure -- first level (yiji) depots, which are located in various military regions but are subordinate to HqAF (The Lanzhou MRAF does not have any first level depots, but has second level depots at Xian, Wulumuqi, and the He-Xi corridor); second level (erji) depots are located in each military region and are subordinate to the MRAF Headquarters; and third level (sanji) depots are located at and subordinate to operational units. First level depots can either supply the second level depots or send items directly to the unit if necessary. The PLAAF's first level air materiel depots are directly subordinate to the Logistics Department Headquarters, but are functionally (yewu) responsible to the Plans Division within the Air Materiel Department.

First level depots have a director, political commissar, two deputy directors, a General Office (bangongshi), Political Division (zhengzhi chu), and Administrative Division (yuanwu chu) (Figure 1). The depot is divided into six sub-depots, an oil preservation shop, and a combined service company. Each sub-depot has a director, the oil preservation shop has a shop director, and the combined service company has a director and political commissar. The depot employs about 230 people.

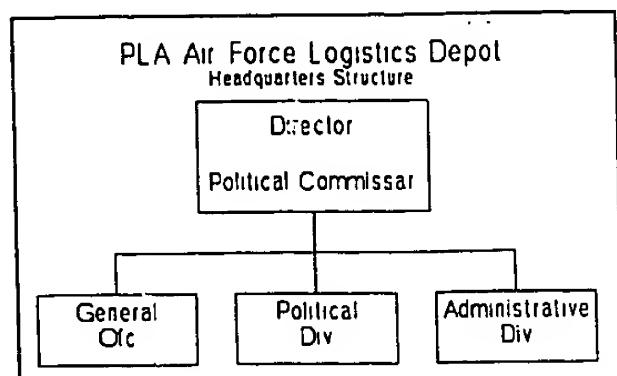


Figure 1

The main task for a first level depot is to ensure the supply of air materiel to aviation units in their area of responsibility. The missions include the following:

- Store, inspect, and maintain materiel
- Supply mission capable (MICAP) items needed urgently
- Technical development, depot management, and depot safety

FIELD STATION: At an aviation division/base, the field station is an independent logistics support unit under dual leadership of the Air Division and the MRAF Headquarters's Logistics Department's Air Materiel Division (hangcai chu). It is responsible for organizing and supplying material and equipment, and also to provide continuous combined service support for operations and training (See Section 13).

ENGINEERING UNITS: There are several engineering units (gongcheng bing zongdui) that are closely associated with the construction department, but are directly subordinate to the Logistics Department. These units are equivalent to an army (jun) or division (shi) and have several subordinate Engineering Divisions (jianzhu gongcheng chu), Groups (dadui), and construction material compounds.

From June-November 1950, the PLAAF selected seven Army engineering companies from throughout China and organized them into five Airfield Construction Engineering Groups (jichang xiujian gongcheng dadui). Each Group, consisting of 620 people, had one subordinate Engineering Company (gong bing lian) and two Airfield Engineering Companies (jichang gongcheng lian). On 4 January 1951, they were officially named the PLAAF 1st, 2nd, 3rd, 4th, and 5th Engineering Groups. In May 1951, the 6th Engineering Group was formed in the Southwest Military Region. In 1962, the 7th zongdui was involved in construction projects in Chengdu, and the 2nd zongdui was involved there in 1973.

Today, these engineering units are used for building PLAAF facilities, but also contract out for civilian projects, such as bridges, roads, buildings, and airfields. For example the 8th Engineering zongdui repaired/expanded airfields in Dandong, Dalian, Qiqihar, and in Xinjiang. It also built the new Shenyang Taoxian airfield from November 1986 to November 1988. Once this project was over, the zongdui was reduced from 9,000 to an Engineering Division (chu) with 300 personnel, and consequently had its status downgraded from that of an army to a regiment (tuan). This move was taken as part of the overall reduction of forces. Most of the remaining people have become civil service personnel.

In April 1988, the PLAAF formally established the main company for an Airport Construction Company (hangkong gang jianshe gongsi) in Beijing. Branch companies were also formed at each of the seven MRAF Headquarters -- Beijing, Shenyang, Lanzhou, Nanjing, Guangzhou, Jinan, and Chengdu. The company's primary purpose is to use the PLAAF's engineering technical units to repair and build airports, underground projects,

warehouses, POL depots, factories, barracks, etc. The company also has a 30 year history of building civilian airfields. This company apparently was established to absorb several units and functions that were civilianized. In addition, the company combined some functions of the HqAF's Logistics Department, as well as some repair and spare parts factories under the Aeronautical Engineering Department.

CAR REPAIR FACILITIES: The Logistics Department has several foreign car repair facilities (jinkou qiche xiupai chang) throughout China, which the PLAAF uses to make money. Each level of the Air Force's logistics organization, from HqAF to the unit level, has its own facilities. For example, one repair facility in Wuhan that belongs to the Guangzhou MRAF Logistics Department invested 30,000 yuan in technical renovations. However, during the first eight months of 1990, the facility made 4.35 million yuan by repairing 1,269 imported vehicles.

1979 SINO-VIETNAM BORDER CONFLICT

Following the turmoil of the Cultural Revolution, the PLAAF was not prepared mentally or operationally for the 17 February to 16 March 1979 border conflict with Vietnam, which China called a "self-defense operation." Prior to the first day of the conflict, the PLAAF spent approximately 45 days preparing its units in the Guangxi Autonomous Region.

The Guangzhou MRAF Headquarters established a Forward Command Post, which worked closely with the 7th Air Corps at Nanning as the unified authority for the PLAAF's participation in the conflict. The PLAAF identified as one of its first missions the need to educate the troops in Guangxi about the reasons for the upcoming operations, and the need to motivate them to work all out preparing for the influx of troops. Upon receiving the combat readiness alert, all of the troops in the region received intensive education by studying the Military Commission's and HqAF's orders and relevant newspaper articles. In addition, three simple principles were put forth -- everything is subordinate to war; resolutely carry out orders; and hard work comes first.

One of the most important tasks during this period was to prepare the airfields in Guangxi for the influx of over 20,000 PLAAF aviation, SAM, and AAA troops. The Guangzhou MRAF's Logistics Department was responsible for organizing the housing, materiel, transportation, and fuel support for these troops and their equipment, as well as the helicopter rescue and transport support for wounded soldiers at the front line. The airfields also took this opportunity to build, repair, or acquire new equipment or facilities which they had not been able to attain previously.

The Logistics Department's subordinate airfield and barracks organizations had two primary missions -- to support housing for those troops already stationed in Guangxi, and to prepare housing, food, water, and electricity for the incoming troops. For example, these organizations issued about 10,000 mobile beds, over 32,000 meters of water pipe, and 200 km

of electric cable, built 43,000 square meters of bamboo sheds, and repaired over 23,000 square meters of old housing.

Since the PLAAF's 7th Air Corps in Nanning did not have prior experience in managing supply support, it worked closely with the PLAAF's Forward Command Post, Air Divisions and Regiments, and field stations to provide the necessary materiel. For example, some troops brought their own materiel or had it transported directly to them from their home bases, while materiel from other outside areas was sent directly to airfields where troops were massed. The airfield's field station then managed the materiel based upon orders from the Forward Command Post's logistics organization.

Because it was not possible to construct housing immediately after the troops arrived, transportation of the necessary material prior to the troops' arrival was a critical factor. For example, they used boats and vehicles to transport mobile housing with the troops to Tianyang. During the conflict, the Nanning Wuxu field station dispatched over 16,500 vehicles and drove 820,000 km in order to provide support for portions of an aviation regiment and one independent air group.

Based upon initial estimates of the amount of fuel required, the PLAAF's fuel supply was totally inadequate and several depots were almost empty. Therefore, during the preparation period, all of the airfields' fuel depots were filled completely. This included the depot at Tianyang, which relies on water transport for its fuel supply. Some of the airfields did not have rail spurs, so vehicles had to bring in all the fuel. In addition, all of the combat readiness tanks available throughout the military region and some from outside the military region were quickly transferred to the front line airfields. These expanded the amount of aviation kerosene by over 50 percent. By the time the conflict began, the amount of fuel supplied to all the Guangxi airfields was 4.3 Times the normal amount.

Supplying fuel during peacetime was difficult, but even more difficult during wartime. Furthermore, because some airfields, such as Ningming, are close to the border, their fuel storage is only partially underground, and the rail line supplying the bases are busy, the enemy could destroy or disrupt fuel supplies. Because of this situation, the PLAAF used about 45 days to build over 50 kilometers of semi-permanent fuel pipes to three different airfields.

During the conflict, there was no air war, so the PLAAF restricted its missions to fighter reconnaissance and early warning missions along the border, helicopter rescue missions to pickup wounded soldiers, and air transport missions. In addition, the PLAAF did not use any ground attack aircraft or bombers. As a result, only about one-fourth of the fuel

estimated for combat was used, and the difficulties with fuel were fewer than expected. However, several urgent problems were revealed:

-The fuel depot capacity at PLAAF airfields was too little. There was no way to support several types of aircraft or the sustained combat use of fuel for several batches of aircraft.

-The structure and system of the fuel organizations were inadequate to support the fuel needs.

-The refueling equipment was backwards and incompatible.

-The General Logistics Department and Ministry of Railways needed to build a railroad fuel container car cleaning station between Quanzhou and Liuzhou.

During preparations for the conflict, the 7th Air Corps Logistics Department's Health Division established a helicopter medical rescue plan. After receiving approval from the Guangzhou MRAF Forward Command Post, an Air Transport Rescue Group (kongyun jiuhe zu) was organized under the unified leadership of the 7th Air Corps. This team consisted of medical teams from the Wuxu, Ningming, and Tianyang field stations, of Army field hospitals, and of the 19th AAA Division's Health Office.

An Air Transport Command Group (kongyun zihui zu) was established to dispatch helicopters and vehicles, and to organize front line field hospital concentration points for the wounded, and timely reception at the rear hospital helicopter landing pads. The command group consisted of cadres from the administrative, air traffic control, and health offices. Wuxu, Ningming, and Tianyang were allocated nine Zhi-5s and two MI-8s. Each Zhi-5 has six stretchers and blankets, and each MI-8 has five stretchers and blankets. With modifications, the Zhi-5 could carry 10 stretchers and the MI-8 could carry twelve.

The mission for the helicopters was to transport wounded soldiers to Nanning City's Army hospital from field hospitals along the border between Guangxi's Dongxing Xian and Napo Xian. Since the nearest point was 110 km and the farthest was 280 km, each helicopter trip took 2-4 hours. During most sorties, the helicopters could not turn off their engines or refuel at the pickup points. Altogether, the helicopters picked up 549 wounded soldiers from front line field hospitals and transferred them to the rear.

SECTION 19

AIR FORCE RESEARCH INSTITUTES

All of the PLAAF's research institutes (yanjiusuo) are subordinate to HqAF's Headquarters, Logistics, or Aeronautical Engineering Department. In turn, all of the research institutes within the Headquarters Department are subordinate to the Scientific Research Department, and those in the Logistics and Aeronautical Engineering Departments to their respective Headquarters Departments. Each of these three departments have a division (chu) which is specifically responsible for planning, budgeting, and issuing requirements/ projects to each of their research institutes.

There are eight numbered research institutes under the Scientific Research Department. Each of these research institutes have about 180-200 personnel. The senior administrative personnel are active duty military, and the technicians are PLAAF civil service personnel. While this department has functional (yewu) control for the planning, budgeting, and requirements for these institutes, other departments have administrative (xingzheng) responsibilities for them.

In general terms, the Scientific Research Department is responsible for development of new systems, and the other departments are responsible for the systems once they are deployed. However, the Scientific Research Department, the research institute, and the associated department work closely on all phases of weapons and equipment development. Except for the First and Fourth Research Institutes, all of the research institutes assigned to the Scientific Research Department are associated with departments in the Headquarters Department. The Headquarters Department also has several research laboratories (yanjishi).

The First (Aeronautical Engineering/hangkong gongcheng) Research Institute, AKA the Maintenance/weihu Research Institute, was established in July 1959, changed its name to the PLA Sixth Research Institute in June 1961, and was reactivated as the PLAAF First Research Institute in September 1962. It is functionally subordinate to the Scientific Research Department, but is administratively subordinate to the Aeronautical Engineering Department's Field Maintenance Department. It is located at Beijing Nanyuan airfield.

The Second (Radar/leida) Research Institute was established between 1959-1965. It is functionally subordinate to the Scientific Research Department, but is administratively subordinate to the Radar Department. It is co-located with the Third, Fifth, and Seventh Research Institutes at Qinghe, which is located just north of Beijing. There is an Air Force radar repair factory in Lintong, near Xian, which probably works closely with this research institute.

The Third (Communications/tongxin) Research Institute was established between 1959-1965. It is functionally subordinate to the Scientific Research Department, but is administratively subordinate to the Communications Department. It is co-located with the second, fourth, and seventh research institutes in Qinghe.

In July 1951, the Fourth (Aviation Medicine/hangkong yixue yanjiusuo/ hangyi yanjiusuo) Research Institute was established in Beijing and is co-located with the Air Force General Hospital. It is functionally subordinate to the Scientific Research Department, but is administratively subordinate to the Logistics Department's Health Department.

The Fifth (Air Defense/daodan) Research Institute is functionally subordinate to the Scientific Research Department, but is administratively subordinate to the Antiaircraft Artillery Department. It also works closely with the Logistics Department's Armament Department's SAM Division. It is responsible for SAMs and probably AAA, but is not responsible for air-to-air missiles. It is co-located with the second, third, and seventh research institutes in Qinghe.

The Sixth (Telecommunications Technology/dianxin jishu or Intelligence/ qingbao) Research Institute is functionally subordinate to the Scientific Research Department, but is administratively subordinate to the intelligence department. The primary missions of the Sixth Institute are development of telecommunications equipment for intelligence collection, as well as ground and aerial reconnaissance. Ground reconnaissance includes listening posts along the border, and there is a division (chu) within the institute which is specifically responsible for this mission. Aerial reconnaissance includes photographic and other means. It is located in northern Beijing.

The Seventh (Aviation Weather/hangkong qixiang) Research Institute was established in 1958. It is functionally subordinate to the Scientific Research Department, but is administratively subordinate to the Weather Bureau. It is co-located with the second, third, and fifth Research Institutes in Qinghe.

The Eighth (Weapons System and Evaluation/wuqi xitong lunzheng suo) Research Institute belongs solely to the Scientific Research Department. This institute evaluates ongoing/completed research to see if it is actually feasible to proceed with a particular system. If the eighth research institute approves the theoretical concepts, then it issues the necessary requirements to continue research or to produce the specific system or piece of equipment. This institute has several subordinate laboratories and is also responsible for air-to-air missile development. It was previously co-located with the second, third, fifth, and seventh research institutes in Qinghe, but moved in 1989 to a new facility at Beijing Nanyuan airfield.

The Simulator Research Lab/moniqi yanjiushi is functionally subordinate to the Scientific Research Department, but is administratively subordinate to the Training Department.

The Logistics Department's Headquarters Department is responsible for the functional control, including the budget, plans, and regulations, for all of the research institutes that belong to the Logistics Department. In the 1950s and 1960s, the Logistics Department established the Medical and Fuels Research Institutes. After the Third Plenum of the 11th Party Congress (1978), research institutes such as those for capital construction, aviation munitions, and SAMs, etc., were established.

The Fuels (youliao) Research Institute was established as the Aviation Fuel Research Institute (hangkong youliaoyanjiusuo) in 1960. It is functionally subordinate to the Logistics Department's Headquarters Department, but is administratively subordinate to the Fuels Department. It is located in Beijing.

The Clothing (beizhuang) Research Institute is functionally subordinate to the Logistics Department's Headquarters Department but is administratively subordinate to the Quartermaster Department. It is located in Beijing.

The Aviation Munitions (hangkong danyao) Research Institute is functionally subordinate to the Logistics Department's Headquarters Department, and is administratively subordinate to the Armament Department. It is located in Chuxian/Chuzhou City, Anhui Province.

The Four Stations Equipment (sizhan zhuangbei) Research Institute develops oxygen generation, compressed air, battery charging, and power supply equipment. Its location is unknown. There are PLAAF four stations repair facilities (sizhan xiuli chang) in Shenyang and Chuzhou.

The Medicine Examination/Inspection (yaopin jianyan) Research Institute is functionally subordinate to the Logistics Department's Headquarters Department, but is probably administratively subordinate to the Health Department. It is located at Beijing Nanyuan airfield.

The Capital Construction (jijian gongcheng) Research Institute is functionally subordinate to the Logistics Department, is probably administratively subordinate to the Airfield Construction and/or Airfield and Barracks Construction Departments.

The Surface-to-Air Missile (dikong daodan) Research Institute is subordinate to the Logistics Department. Its functions, compared with that of the Fifth Research Institute, is not known.

The Aviation Repair (hangkong xiuli) Research Institute was established in Nanjing in February 1978. It is functionally subordinate to the Aeronautical Engineering Department's Headquarters Department, but is administratively subordinate to the Factory Management Department. It is co-located with the Aviation Electro-Mechanical Research Institute (hangkong jidian yanjiusuo) in Nanjing.

In addition to the research institutes noted above, the PLAAF formed the research institutes listed below from 1957-1965. Their status today is not known.

- Aviation Equipment Technical & Maintenance Research Institute (hangkong zhuangbei jishu weixiu yanjiusuo)

- Navigation Research Institute (daohang yanjiusuo)

- Automation Research Institute (zidonghua yanjiusuo)

- Refueling Equipment Research Institute (jiayou shebei yanjiusuo)

- Chemical Defense Research Institute (fanghua yanjiusuo)

RESEARCH CENTERS

There are also various PLAAF research centers, such as those listed below:

- The PLAAF Navigation Theory Research Center (kongjun linghang lilun yanjiu zhongxin) was established in 1981

- The PLAAF's SAM and AAA Applied Research Center (kongjun dikong daodan, gaopao yingyong yanjiu zhongxin)

SECTION 20

AIR FORCE ACADEMIES AND SCHOOLS

The PLAAF has 26 academies and schools (yuan xiao) to train its officers today. Most of them had their origin as numbered aviation schools (hangxiao) during the 1950s, and include preparatory schools, flying academies, PLAAF branch specialty schools, and intermediate/advanced level academies. There are also various enlisted technical schools, including an NCO School at Dalian which was established in 1987.*

The HqAF Training Department (xunlian bu), which today is a second level administrative department under the Headquarters Department, was established as a first level department in 1949. In October 1953, this department split into two first level departments:

- The PLAAF Military Training Department (kongjun junshi xunlian bu) was responsible for unit training
- The PLAAF Military Schools Administrative Department (kongjun junshi xuexiao guanli bu) was responsible for education and training in the schools/academies. It changed its name to PLAAF Schools Department (kongjun junxiao bu) in 1958.

Until January 1959, the PLAAF's schools were directly subordinate to HqAF. In January 1959, however, structuring the schools and their curriculum was HqAF's responsibility, but administration for the schools was split between HqAF and the MRAF Headquarters. For example, HqAF was responsible for policy, mission, curriculum, organization, and plans, as well as controlling student assignments and daily training. The MRAF was responsible for local party work, daily administration, logistics, and maintenance. These responsibilities remained the same through the end of the Cultural Revolution.

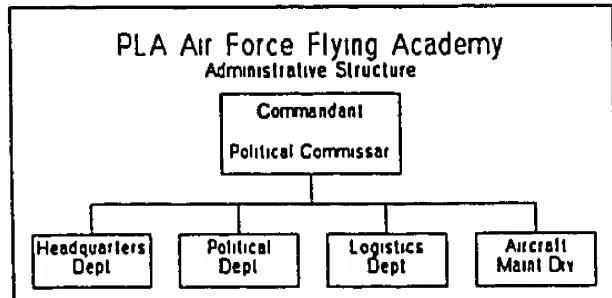


Figure 1

The administrative structure is different for the flying and non-flying academies (Figures 1 and 2). Flying academies have four first level departments -- Headquarters Department (siling bu), Political Department (zhengzhi bu), and Logistics Department (houqin bu), and Aircraft Maintenance Division (jiwu chu). Non-flying academies only have three first level departments -- Training Department (xunlian bu), Political Department (zhengzhi

* Unless specified by the Chinese during a visit or in a printed brochure, the word xueyuan has been translated as academy and xuexiao as school.

bu), and Administration Department (yuanwu bu). For schools (xuexiao), the Administration Department is called the xiaowu bu.

Today, with the exception of flying academies (which actively recruit students), the rest of the PLAAF academies compete for students along with the other national colleges. One incentive for joining the military as an officer is that the education is free. High school seniors who want to attend a PLAAF academy must first list from one to three specific PLAAF academies on their preference sheet. The sheet may also contain non-military schools.

In order for them to be considered for entrance, they must pass the national college entrance examination and receive a qualifying score equal to or higher than that required by that particular academy. If their scores qualify, they are then screened by the military to see if they are physically, politically, and psychologically qualified. Once they are accepted, they receive a short period of basic military training at a training regiment before they enter the academy. Cadet training lasts for four years and they graduate with an undergraduate degree (benke) in military science (junshixue xueshi).

If someone does not receive a high enough score to qualify for one of the three choices, they cannot attend another PLAAF academy even if their score is high enough to qualify for that academy. If they still want to join the PLAAF, they must enlist and hope to be selected from the enlisted ranks to attend an academy at a later period.

With the exception of cadets who graduate from flying academies and from the Navigation Academy, all other academy graduates must serve in a unit for one year before receiving their commission as a second lieutenant. Cadets for the Navigation Academy are selected from the enlisted ranks and from pilot academy washouts.

In addition, each Military Region (MR) has various specialized Training Regiments (xunlian/jiaodao tuan) or Training Groups (xunlian dadui) to teach new enlisted recruits basic skills such as aircraft maintenance, driving, etc. Each training regiment determines the length of training based upon the specialty being taught.

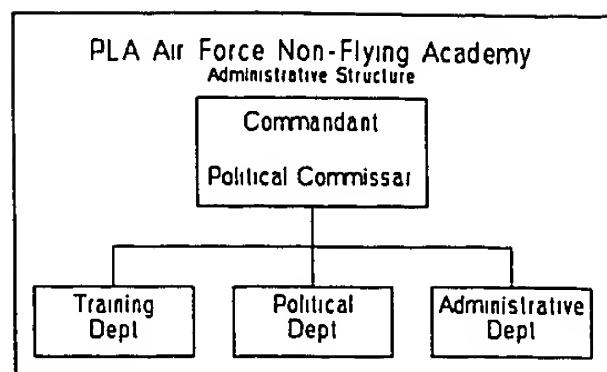


Figure 2

THE EARLY YEARS

Plans for the PLAAF's first aviation schools took place in the early 1940s in Yanan. In September 1945, the Military Commission's Aviation Section (hangkong zu) sent a team from Yanan to northeast China to begin preparations for setting up an aviation school. On 1 March 1946, the Northeast Democratic United Army Aviation School was established at Tonghuā, in southeast Jilin Province. In May, the school moved north to Mudanjiang, and the first class began in July with four basic trainers and a few type 99 advanced trainers. Due to Chinese Nationalist Party (KMT) harassment, the school moved north again in November to the eastern shore of Xingkai lake. However, it moved back to Mudanjiang in November 1948. This school is known as the Northeast Old Aviation School (dongbei lao hangxiao). Many of the initial instructors and ground support personnel were Japanese Air Force members who remained in China after the surrender in 1945. By July 1949, the school had trained 560 people, including 126 pilots. The rest received various ground support training.

In August 1949, the Soviet Union agreed to help China establish six aviation schools and to sell China 434 aircraft of all types. The school at Mudanjiang was approved as the seventh shortly thereafter. By then, they had also collected 113 KMT aircraft, 1278 engines, 74000 bombs, and 2267 technicians, and had repaired 40 airfields. On 6 October, the Military Commission approved the following seven aviation schools (hangkong xuexiao/hangxiao), and on 1 December the 1st through 6th Aviation Schools split and began classes. On 5 January 1950, the 7th Aviation School began classes.

<u>School</u>	<u>Location</u>
1st	Harbin
2nd	Changchun
3rd	Jinzhou
4th	Shenyang
5th	Jinan
6th	Beijing Nanyuan
7th	Mudanjiang

Initially, PLAAF students came from Army units or from civilian schools, so the PLAAF decided to give them one year of preparatory education to study politics and military affairs. In January 1950, an Aviation Preparatory (hangkong yuke) zongdui was established in Changchun to train new aircrew (kongqin) members for their first year. The first class had 1751 students. In July 1951, another Aviation Preparatory zongdui was established at Hangzhou Jianqiao airfield to train ground crew (diquin) members for their first year. The first class had 2000 students. This school later moved to Xuzhou and became the Logistics School. The Chengdu Preparatory zongdui was established in March 1950 for ground crew members. The first class had 2699 students. It was at the old KMT Air Force Armament School. Four more Preparatory zongdui were established between December 1950 and July

1951 in the Huabei MR at Zhangjiakou; in the Zhongnan MR at Hankou, Hengyang, and Xiaogan; in Hangzhou and in Xian.

In July 1951, they were renamed as follows, and each zongdui averaged 1400-1800 cadets.

<u>Location</u>	<u>Aviation Preparatory zongdui</u>
Changchun	1st
Xian	2nd
Chengdu	4th
Jianqiao (later moved to Xuzhou)	5th
Hangzhou	6th
Xiaogan	7th
Zhangjiakou	Abolished

Over the next three years, additional Preparatory zongdui changes took place, and then all of the zongdui changed their names to Aviation Preparatory Schools (hangxiao yubei xuexiao) in early 1954.

- The Xian Communications (tongxin) zongdui, which trained communications maintenance personnel was named the 3rd Aviation Preparatory zongdui. In September 1957, the 3rd Preparatory School changed its name to the PLAAF Communications School (kongjun tongxin xuexiao).

- In June 1953, the 8th Aviation Preparatory zongdui was established in Baoding.

- In March 1958, the 5th, 6th, 7th, and 8th Preparatory Schools were abolished. The only remaining Preparatory Schools were the 1st and 2nd, which were responsible for basic military and political training for aircrew cadets.

Over the next few years, additional aviation schools were established and consolidated.

- In May 1951, the 8th Aviation School was established in Shenyang to train fighter ground crews, and all of the 4th Aviation School's fighter ground crews were moved there.

- In August 1951, ground crews from the 1st and 2nd Bomber Schools were split and formed the 9th Aviation School in Changchun.

- On 27 September 1951, the PLAAF Political School (kongjun zhengzhi xuexiao) was established in Luoyang

- 30 October 1951 PLAAF Rear Services School (kongjun houfang qinwu xuexiao) was established in Taiyuan
- In 1951, the ground crews from the 3rd, 5th, and 6th Fighter Aviation Schools transferred to form the 10th Aviation School.
- In January 1953, the 11th Flying School was established in Huxian, Shaanxi Province. It began as a normal training school, but then became a school for training flying squadron commanders and training on new and modified aircraft.
- In February 1953, the 12th Aviation School was formed at Linfen, Shanxi Province, to train fighter pilots.
- In October 1954, the PLAAF Logistics School (kongjun houqin xuexiao) was established in Taiyuan, and the PLAAF Political School (kongjun zhengzhi xuexiao) was established in Luoyang.
- On 27 August 1955, the PLAAF took over responsibility for the Beijing Weather Technical School (qixiang zhuankexuexiao), which was renamed the PLA Weather Technical School (jiefangjun qixiang zhuankexuexiao). The name changed later to the PLAAF Weather Academy (kongjun qixiang xueyuan)
- In October 1956, the 14th Aviation School was established in Xinjin, Sichuan Province, to train civil aviation pilots. This school was later given to CAAC.
- Originally, the 8th, 9th, and 10th Aviation Schools all taught the same material to all ground support personnel, but this was not efficient, so in 1956 the 8th and 10th schools became responsible for training fighter ground support engineers (shi) in five specialties -- machinery (jixie), armament (junxie), special equipment (teshe), Radio (wuxiandian), and radar (leida). The 9th school remained the same.
- In April 1956, the 13th Aviation School was formed using the 4th Preparatory School as a basis, to train fighter ground support technicians (yuan) in five areas -- machinery, armament, instruments (yibiao), electricity (dianqi), and radio.
- In September 1958, a Special Weapons School (tezhong wuqi xuexiao) was organized in Baoding and called the 15th Aviation School (hangkong xuexiao). This school was responsible for training all services on surface-to-surface, surface-to-air, and shore-to-ship missile maintenance. In 1963, this school became primarily responsible for training SAM maintenance, construction, and commanders.

- In September 1958, the 16th Aviation School was established in Huxian, Shaanxi Province, to train navigators, gunners, and airborne communicators who were previously trained with pilots at the 1st and 2nd Bomber Aviation Schools. This school later became the Navigation Academy.
- In September 1959, the 17th Aviation School was established in Jilin to train fighter machinery technicians.
- In April 1961, the PLAAF Health School (kongjun weisheng xuexiao) was established in ChangChun to train basic and intermediate level medical personnel.
- In 1967, the 8th, 9th, 10th, and 13th Aviation Schools were renamed the 1st, 2nd, 3rd, and 4th Aviation Maintenance Schools (hangkong jiwu xuexiao). The 1st and 2nd Schools later became the 1st and 2nd Maintenance Technical Training Schools (hangkong jishu zhuanke xuexiao).
- Due to the increasing number of flying hours, four new fighter pilot schools were formed in 1967 (8th and 9th Aviation Schools) and in 1968 (10th and 13th Aviation Schools).

1957 PLAAF-ADF MERGER

When the Air Defense Force (fangkongjun) and PLAAF merged in 1957, the Air Defense Force's Advanced Air Defense School (gaoji fangkong xuexiao), AAA Troop School (gaoshepao bing xuexiao), Radar School (leida xuexiao), Maintenance School (jishu xuexiao), and Air Defense School (fangkong xuexiao) became part of the PLAAF structure. In March 1958, the PLAAF decided the following:

- To have the Advanced Air Defense School continue training the AAA and radar battalion and above commanders
- To abolish the Maintenance School and transfer the training mission for AAA maintenance officers to the AAA Troop School
- To have the AAA Troop School train AAA company and platoon commanders and maintenance officers
- The Air Defense School and Radar Schools were merged and called the PLAAF Radar Troop School (kongjun leida bing xuexiao) with the primary mission of training radar site commanders, platoon commanders, and maintenance engineers.

AIR FORCE COMMAND COLLEGE

The Air Force College (kongjun xueyuan), which was based on the Nanjing PLA Military Academy's Air Force Department, was established in Beijing in September 1958. The college had the following departments (xi):

- Basic Department (jiben xi)
- Navigation Department (linghang xi)
- Advanced Accelerated Department (gaoji sucheng xi)
- Political Department (zhengzhi xi)
- Logistics Department (houqin xi)

The Air Force College's primary mission was to train the following officers:

- Aviation troop regiment and battalion level commanders and staff officers
- Group and above navigation directors (linghang zhuren)
- Air division and above commanders and staff officers
- Regiment and above political and logistics officers

AIR FORCE ENGINEERING COLLEGE

The PLAAF Engineering College (kongjun gongcheng xueyuan) was organized in Xian in February 1961, based upon Harbin's PLA Military Engineering Academy's Air Force Engineering Department. The college's primary responsibility was to train squadron and above maintenance officers, airfield construction officers, and weather engineering officers. The college began with the following departments:

- Aviation Machinery Department (hangkong jixie xi)
- Aviation Armament Department (hangkong junxie xi)
- Special Equipment Department (tezhong shebei xi)
- Radio Department (wuxiandian xi)
- Airfield Construction Department (jichang jianzhu xi)

CHANGES IN 1963

In March 1963, the following PLAAF schools changed their names and became responsible for training battalion and group, as well as regiment and above commanders and maintenance personnel:

<u>OLD NAME</u>	<u>NEW NAME</u>
-----------------	-----------------

Advanced Aviation School (gaoji hangxiao)
1st Advanced Technical School (diyi gaoji zhuanke xuexiao)

Advanced Air Defense School (gaoji fangxiao)
2nd Advanced Technical School (dier gaoji zhuanke xuexiao)

Weather Technical School (qixiang zhuanke xuexiao)
3rd Advanced Technical School (disan gaoji zhuanke xuexiao)

15th Aviation School (di shiwu hangxiao)
4th Advanced Technical School (disi gaoji zhuanke xuexiao)

PLAAF SCHOOLS IN 1965

By 1965, the PLAAF had made several changes so that there were 29 academies and schools:

- PLAAF College (kongjun xueyuan)
- PLAAF Engineering College (kongjun gongcheng xueyuan)
- Four Advanced Technical Schools (gaoji zhuanke xuexiao)
- Ten Aircrew Aviation Schools (kongqin hangxiao)
- Five Ground Crew Aviation Schools (diquin hangxiao)
- Political School (zhengzhi xuexiao)
- Logistics School (houqin xuexiao)
- AAA School (gaopao xuexiao)
- Radar School (leida xuexiao)

- Communications School (tongxin xuexiao)
- Health School (weisheng xuexiao)
- Two Aviation Preparatory Schools (hangkong yubei xuexiao)

By 1965, training for aviation troop commanders was divided into three levels as follows:

- Aircrew aviation schools trained pilots
- Advanced aviation schools trained flying group commanders
- The PLAAF College trained aviation troop regiment, division and above commanders

In addition, aviation maintenance commander training was divided into two levels:

- Ground crew aviation schools trained all ground crew engineers
- The Engineering College trained regiment and above maintenance directors, and maintenance group commanders

OUTLOOK AFTER THE 1960s

During the worst excesses of the Cultural Revolution in the 1960s, several PLAAF academies/schools were closed, but some of them were revived during the 1970s.

- In June 1969, the Weather School (qixiang xuexiao) became the Weather Academy (qixiang xueyuan)
- In December 1973, the PLAAF Military-Political Cadre School (kongjun junzheng ganbu xuexiao) was established on the site of the old PLAAF College in Beijing.
- However, on 18 May 1978, the Military-Political Cadre School was abolished and the PLAAF College was reactivated
 - In January 1974, the two Aviation Preparatory Schools and the PLAAF Communications School were reactivated
 - On 15 March 1978, the PLAAF Political School was reactivated
 - On 20 March 1978, the PLAAF Logistics School was reactivated in Xuzhou
 - On 5 June 1978, the PLAAF AAA School (kongjun gaoshepao bing xuexiao) was reactivated in Guilin

- In June 1983, the Radar School (leida xuexiao) became the Radar Academy (leida xueyuan)
- On 3 February 1987, the PLAAF Flight Test and Training Center (kongjun feixing shiyan xunlian zhongxin) was established in Cangzhou (AKA Cangxian), Hebei Province, replacing the 11th Aviation School

THE 1980s

In July 1986, the PLAAF made several changes, including changing the name of most of the schools (xuexiao) to academies (xueyuan) and abolishing the 9th, 10th, and 11th Aviation Schools. In addition, the Engineering College, SAM Academy, and Weather Academy were approved to give masters degrees:

OLD NAME

NEW NAME

PLAAF College (kongjun xueyuan)

PLAAF Command College (kongjun zhihui xueyuan)

Political School (zhengzhi xuexiao)

Political Academy (zhengzhi xueyuan)

Aviation School (hangkong xuexiao)

Flying Academy (feixing xueyuan) or Navigation Academy (linghang xuexiao)

Communications School (tongxin xuexiao)

Communications Engineering Academy (dianxun gongcheng xueyuan)

Logistics School (houqin xuexiao)

Logistics Academy (qinwu xueyuan)

AAA School (gaoshepao bing xuexiao)

AAA Academy (gaoshepao bing xueyuan)

SAM Academy (dikong daodan xueyuan)

SAM Academy (daodan xueyuan)

Aviation Maintenance School (hangkong jiwu xuexiao)

Maintenance Technical Training School (hangkong jishu zhuanke xuexiao)

Aviation Medicine School (kongyi xuexiao)
Medical School (yixue zhuanke xuexiao/kongyizhuan)

Aviation Preparatory School (hangkong yubei xuexiao)
Flying Basic School (feixing jichu xuexiao)

PLAAF SCHOOLS TODAY

Based on the changes in the 1980s, there are 26 Air Force academies and schools in 1991.

<u>School</u>	<u>City</u>	<u>Province</u>
Antiaircraft Artillery Academy kongjun gaopao xueyuan	Guilin	Guangxi
Command College kongjun zihui xueyuan	Beijing	
Communications Engineering Academy kongjun dianxun gongcheng xueyuan/kongdianyuan	Xian	Shaanxi
Dalian NCO School kongjun Dalian shiguan xuexiao	Dalian	Liaoning
Engineering College kongjun gongcheng xueyuan/konggongyuan	Xian	Shaanxi
Logistics Academy kongjun qinwu xueyuan (formerly kongjun houqin xuexiao)	Xuzhou	Jiangsu
Medical School kongjun yixue xuexiao/kongyixiao	Jilin	Jilin
Missile Academy kongjun daodan xueyuan	Sanyuan	Shaanxi
Navigation Academy kongjun linghang xueyuan	Huxian	Shaanxi
Political Academy kongjun zhengzhi xueyuan/kongzhengyuan	Shanghai	

Radar Academy kongjun leida xueyuan	Wuhan	Hubei
Weather Academy kongjun qixiang xueyuan	Nanjing	Jiangsu
1st (Maintenance) Tech Training School kongjun diyi hangkong jishu zhuanye xuexiao/yihangzhuan	Xinyang	Henan
2nd (Maintenance) Tech Training School kongjun dier hangkong jishu zhuanye xuexiao/erhangzhuan	Changchun	Jilin

FLYING ACADEMIES AND SCHOOLS

First Flying Basic School kongjun diyi feixing jichu xuexiao	Changchun	Jilin
Second Flying Basic School kongjun dier feixing jichu xuexiao	Baoding	Hebei
First Flying Academy kongjun diyi feixing xueyuan/yi feiyuan	Harbin	Heilongjiang
Second Flying Academy kongjun dier feixing xueyuan/er feiyuan	Jiajiangxian	Sichuan
Third Flying Academy kongjun disan feixing xueyuan/san feiyuan	Jinzhou	Liaoning
Fourth Flying Academy kongjun disi feixing xueyuan/si feiyuan	Shijiazhuang	Hebei
Fifth Flying Academy kongjun diwu feixing xueyuan/wu feiyuan	Wuweiyan	Gansu
Sixth Flying Academy kongjun dilu feixing xueyuan/liu feiyuan	Zhuoxian	Hebei
Seventh Flying Academy kongjun dici feixing xueyuan/qi feiyuan	Changchun	Jilin
Eighth Flying Academy kongjun dibu feixing xueyuan/ba feiyuan	Liushuquan	Xinjiang

Twelfth Flying Academy

kongjun dishier feixing xueyuan/shier feiyuan

Linfen

Shaanxi

Thirteenth Flying Academy

kongjun dishisan feixing xueyuan/shisan feiyuan

Bengbu

Anhui

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SECTION 21

PILOT TRAINING

The PLAAF's Pilot Recruitment Office (zhaoshou feixingyuan bangongshi/zhaofeibian), which belongs to the HqAF Military Affairs Department (junwu bu), is responsible for establishing the pilot recruitment requirements. Each MRAF Headquarters also has a Pilot Recruitment Office. Every March, HqAF's office issues the call for pilot candidates. There are about 3,000 qualified students per year, and only students from specified areas may apply. In the past, the PLAAF has also recruited college graduates (age 20-22); however, the best success rate for training pilots has been with the high school graduates. In 1990, the Air Force recruited 1330 flying cadets.

CADET REQUIREMENTS

The 1989 requirements below are representative of the annual pilot recruiting criteria:

- Cadets were chosen from 14 provinces (Hebei, Shanxi, Liaoning, Jilin, Heilongjiang, Jiangsu, Zhejiang, Anhui, Hubei, Hunan, Sichuan, and Yunnan)
- Female cadets were chosen from Shandong, Liaoning, and Hebei
- Cadets must be age 16-19 and a high school graduate
- Foreign language was limited to English
- Male cadets height limits were 165-178 cm
- Female cadets height limits were 160-175 cm
- Male cadets must weigh at least 50 kg
- Female cadets must weigh at least 45 kg
 - Cadets cannot be color blind
 - Cadets must not have certain diseases
 - Cadets cannot wet the bed past age 13
 - Cadets must have political reliability
 - Candidates must score 350 or above on the National High School Test

UNDERGRADUATE TRAINING

Pilot training lasts for four years as an undergraduate (benke) and is divided into two distinct parts. The first part lasts for 20 months at one of two basic flying schools (Changchun and Baoding), and consists of military (junshi), political (zhengzhi), cultural/literary (wenhua), and physical (tiyu) training, as well as parachute (tiaosan) training.

The second part lasts 28 months at one of the ten flying academies, each of which has 3-4 flying regiments (numbered the 1st-4th) and consists primarily of special technical training (feixing zhuanye jishu xunlian). The first phase is divided into 5 months (1141 hours) of aeronautical theory (hangkong lilun), political courses, flight theory, navigation, aerodynamics, air-to-air gunnery, aircraft structure, flight dynamics, aircraft engines, instruments, weather, and two practice parachute jumps, as well as command, control, and science training (zihui guanli kexue xunlian).

The next phase lasts for one year and consists of 155 hours in the primary trainer (CJ-6). Six courses are taught, including aerobatics, navigation, and formation, circuit, and instrument flying. There is a 30 percent dropout rate in this phase.

The last phase (advanced training), lasts for 12 months and consists of 130 flying hours in the F-5. The students train in attack, navigation, circuit, formation, aerobatics, and instrument flying, as well as participate in exercises. This portion has a 10 percent attrition rate, and the total attrition rate during the three phases is 55 percent.

Graduates receive a degree in military science (junshixue xueshi) and have the status of a deputy company (fulianzhi) pilot officer (feixing junguan). Outstanding graduates may become company grade officers. Students who washout are given the opportunity to become ground support officers by attending the appropriate school.

TRANSITION TRAINING

Until 1986, fighter and ground attack pilot training was a two phase process following basic flight school (feixing jichu xuexiao) -- flying academy (feixing xueyuan), and operational unit (zuozhan budui) training. In 1986, the PLAAF began testing a new three phase process (sanji xunlian tizhi) after basic flight school, whereby these pilots go directly from a flying academy to a transition training base (gaizhuang xunlian jidi) before being assigned to an operational fighter or ground attack unit. In July 1988, the Military Commission approved this as an official policy for all fighter pilot training and authorized a transition training base to be established in each Military Region. This will eventually eliminate the need for operational fighter divisions to have a training regiment.

The first transition training base was officially opened in the Guangzhou Military Region. This base was originally a fighter division that became a training division for new pilots. The training division began training new pilots in March 1986. By July 1988, the

division had trained six groups of 116 pilots, of which 74 were capable of flying in three types of weather conditions (sanzhong qixiang) and moved to an operational unit.* The Beijing MRAF's transition training base, which was previously an air division, received its first pilots in August 1989. They graduated in October 1990, having completed eight items, including aerial combat (kongzhan), ground gunnery (diba), and night navigation (yehang). The transition training base in the Shenyang MRAF was formally established in September 1988 for fighters and ground attack aircraft. The base, which has three regiments, was previously an air division.

OPERATIONAL UNIT TRAINING

Previously, operational unit training consisted of two phases. The first phase lasted for two years and consisted of 240 hours of theory and 240 hours of flying. Operations were conducted during the day, at night, and under bad weather conditions. The first 100 hours were flown in the F-5 for basic airmanship, then the pilot transitioned to the F-6 or F-7 for 100 more hours. After this, the pilot continued to train in the F-6/F-7 for 200 more hours. The second phase was actual tactics training (zhanshu xunlian).

For all practical purposes, the new transition training bases have taken over the responsibility for the first year of operational training from the units. Training at the transition bases now lasts for one year and includes 100-120 flying hours. The pilots must be capable of flying in three weather conditions before they can graduate.

The second year is still conducted at the operational unit. Whereas it previously took about 4-5 years at an operational unit for a pilot to become proficient (i.e. fly in four weather conditions), according to an Air Force report in December 1990, it now takes only 2-3 years. Once the pilot arrives at his unit, annual flying hours vary according to the type of aircraft as follows:

<u>Aircraft</u>	<u>Flying Hours</u>
- Bombers	80
- E Fighters	100-110
- A-5 ground attack aircraft	150

* The PLAAF refers to flying in day VFR (zhoujian jiandan), day IFR (zhoujian fuza), night VFR (yejian jiandan), and night VFR (yejian fuza) conditions as flying in different types of weather conditions (qixiang feixing). For example, flying in day and night VFR and day IFR is referred to as flying in "three weather conditions" (sanzhong qixiang). Flying in day/night VFR and IFR is considered "four weather conditions."

Since 1982, each MRAF has formed 1-3 "lanjun/Blue Force" units (fendui). The PLAAF Flight Test and Training Center in Cangzhou also formed a "Blue Force" fendui. All of the pilots in these fendui are selected from Class A Regiments (jia lei tuan).

In 1985, the Nanjing and Beijing MRAFs each established (a) tactical training cooperation area(s) (zhanshu xunlian xiezuo qu). Thereafter, each of the other MRAFs established similar area(s). The purpose of these areas was to have unified training among all of the PLAAF's branches (SAM, AAA, radar, and communications), with the aviation branch as the most important.

In 1986, some MRAFs and Air Corps established either joint (hetong) tactical training cooperative areas with Group Armies, or Army-PLAAF opposing (lu long duikang) training cooperative area(s). Each training period in these areas lasts about a week and is called a war training week (zhanshi xunlian zhou). The Nanjing MRAF was the first MRAF to use this training method.

Zhongguo Kongjun magazine provided a good description of B-6 bomber training in 1986 and 1987 as follows:

In September 1986, eight B-6 bombers from an air division in the Guangzhou MRAF participated in an inter-MRAF long range raid training exercise. The bombers first dropped bombs at a bomb range in Hunan Province, then flew through five provinces for over three hours to drop bombs at a bomb range in the northwest. Although the bombing results were good in Hunan, they were unsatisfactory in the northwest. It was a strange target, the sun was in their eyes, the target was difficult to find, and they were not on time over target, so they had to return home with those bombs. As a result, they only received a rating of two for this portion. The total flight time was 6-7 hours.

In August 1987, another cell of eight bombers conducted a long range raid inspection based on a tactical scenario. The first target was hit during low level bombing, which was followed by a high altitude long distance navigation route with a direct run on a target range on another lake. Before entering a false enemy radar enemy net, they rapidly descended to quietly close on the target. Following this, they used maximum climbing speed to conduct their bombing. However, before entering the bombing starting point, they met an unpredictable event. The number one target on an island in the middle of the lake could not be seen because the water had risen. By the time the first two aircraft discovered this, it was too late to switch to another target. The third aircraft quickly switched to target number six on a peninsula on the lake. The bombs were dropped and hit 15 meters from the center of the target, resulting in a rating of five.

PILOT RATINGS

After the pilots complete their training at an operational unit, they can be awarded one of four pilot ratings. The criteria include time on station, flying hours, flying in weather, and special missions. Of the 10,000 pilots in the entire PLAAF, seven percent of the total number and 15-20 percent of the fighter pilots are special grade. In addition, the PLAAF has awarded aircrew ratings to navigators (linghangyuan), communications and gunnery personnel (tongxin shejiyuan), and instructor pilots (feixing jiaoyuan) as follows:

- 7 percent are special grade pilots (teji feixingyuan)
- 33 percent are first grade pilots (yiji feixingyuan)
- Second grade pilots (erji feixingyuan)
- Third grade pilots (sanji feixingyuan)

PILOT AGE LIMITS

The PLAAF has also established age limits for the various types of pilots. Once a pilot has reached the mandatory age or fails to meet medical qualifications, his flying is terminated (tingfei). One of the most common problems cited, however, is that the PLAAF does not have a mechanism to absorb these pilots into a non-flying job.

- 43-45 for fighter and ground attack pilots (the average age is 28)
- 48-50 for bomber pilots
- 55 for transport pilots
- 47-50 for helicopter pilots
- ~~- 48~~ for women pilots

SECTION 22

AIR FORCE POLITICAL SYSTEM

The PLAAF has three organizations that accomplish political work: Party Committees (dang weiyuanhui/dangwei), political commissars (zhengzhi weiyuan/zhengwei), and Political Departments (zhengzhi bu). Political work includes political education, personnel issues, and propaganda. HqAF's Discipline Inspection Commission (jilu jiancha weiyuanhui), which is chaired by the senior deputy political commissar, works directly for the PLAAF's Party Committee and the Military Commission's Discipline Inspection Commission. Every MRAF Headquarters also has a Discipline Inspection Commission. Each of these commissions are responsible for major disciplinary problems. The political system has about 30,000 people engaged in political work. The PLAAF Political Academy (kongjun zhengzhi xueyuan) in Shanghai graduated 20,000 cadets between 1978-1990.

PARTY COMMITTEES

Major decisions affecting an Air Force unit require the coordination of the unit's Party Committee, which is the nucleus of unified leadership. At HqAF, the political commissar is the secretary (shuji) of the Air Force Party Committee and the commander is the deputy secretary (fushuji). All four deputy commanders, the two deputy political commissars, chief of staff, and the three other first level department directors serve as members of the Air Force Party Committee Standing Committee (dangwei changwei).

In order to exercise the Party's absolute leadership over the military, a Party Committee and Standing Committee are established at each regiment and above. The political commissar is normally the secretary and the commander is the deputy secretary of the Party Committee at these units (budui). In addition, each unit (danwei) or headquarters staff element that has the Army-equivalent status (zhiwu dengji) of a regiment or above also has a Party Committee. For example, the Shenyang MRAF Political Department, which is equivalent to an army (jun), has its own Party Committee (bu dangwei). Grassroots Party Committees (jiceng weiyuanhui) are established at each battalion and equivalent. Grassroots Party Branches (dangde jiceng zhibu) are set up at the company level. Committee members are called chengyuan or weiyuan.

The Party Standing Committee at each level consists of the command staff, which includes the commander, political commissar, deputy commander(s), deputy political commissar(s), chief of staff (who is also the director of the Headquarters Department), plus the directors of the Political, Logistics, and Maintenance elements. The Standing Committee meets regularly to discuss all major decisions affecting the unit and its subordinates. As a result, both the military and political officers are involved in the day-to-day running of the Air Force at all levels.

Although the command staff meets regularly, the PLAAF does have a division of responsibilities at each level. If an issue concerns military affairs, then the military officers or commander will carry out the decision. If the issue concerns political matters, then the political officers are responsible for implementing the decision. However, some issues require input from both parties. For example, the commander at an air regiment determines how many sorties to fly on a particular day, but the political commissar help determine who will fly those missions based on political reliability.

The PLAAF's goal is to eventually have commanders and political commissars who have worked in both military and political assignments. This is especially valuable because the political commissar is responsible for carrying out the unit's operational mission in conjunction with the deputy commander(s) when the commander is absent. For example, the Lanzhou MRAF political commissar, who took the position in 1990, was previously a deputy commander in the Fuzhou and Lanzhou MRAFs.

Since ranks were re-instituted in 1988, the rank relationship between the commander and the political commissar has been somewhat obscure, but the personal relationship has sometimes been forged over many years of working together. For example, PLAAF Commander Wang Hai is a three star general (shangjiang) and outranks Political Commissar Zhu Guang, who is a two star lieutenant general (zhongjiang). Furthermore, although they have different ranks, they both have an Army-equivalent position (zhiwu dengji) of a Military Region Commander.

Only with the attrition of older cadres over the next few years, will the rank relationship among the staff members at all levels, including the commander and political commissar, be known with certainty. For example, some air division commanders are colonels, while their deputy commanders are senior colonels. Although the "normal" rank for the deputy director of an MRAF Political Department is a senior colonel or colonel, the deputy director of the Chengdu MRAF in December 1990 was a major general.

POLITICAL COMMISSARS

Political commissars (zhengwei) are assigned to units (budui and danwei) at and above the regimental level, while political instructors (zhidaoyuan) are assigned to units below this level. Political instructors are also assigned to the PLAAF's flying groups and their maintenance squadrons. Political commissars and instructors are responsible for the following duties:

- Teaching the Chinese Communist Party line, policies, and principles
- Handling personnel issues such as promotion, selection, and transfers, and coordinating on recruitment and training matters
- Overseeing public affairs such as cultural, artistic, and athletic work

Political instructors at the battalion and below receive basic training at the PLAAF Political Academy in Shanghai and political commissars receive senior level training at the Air Force Command College (kongjun zihui xueyuan) in Beijing.

POLITICAL DEPARTMENTS

The General Political Department (GPD) is the highest leading body for political work in the PLA. While divisions and brigades have a Political Department (zhengzhi bu), regiments have a Political Division (zhengzhi chu).

Within the Political Department/Division, there is a director (zhuren), deputy director(s) (fuzhuren), and functional second level departments (bu), divisions (chu), offices (ke), and branches (gu) which are equivalent to those second level elements at HqAF (i.e. Secretariat, Propaganda, Security, Cultural, Cadre/Personnel, etc.). Assistants within the political system are called secretaries (mishu).

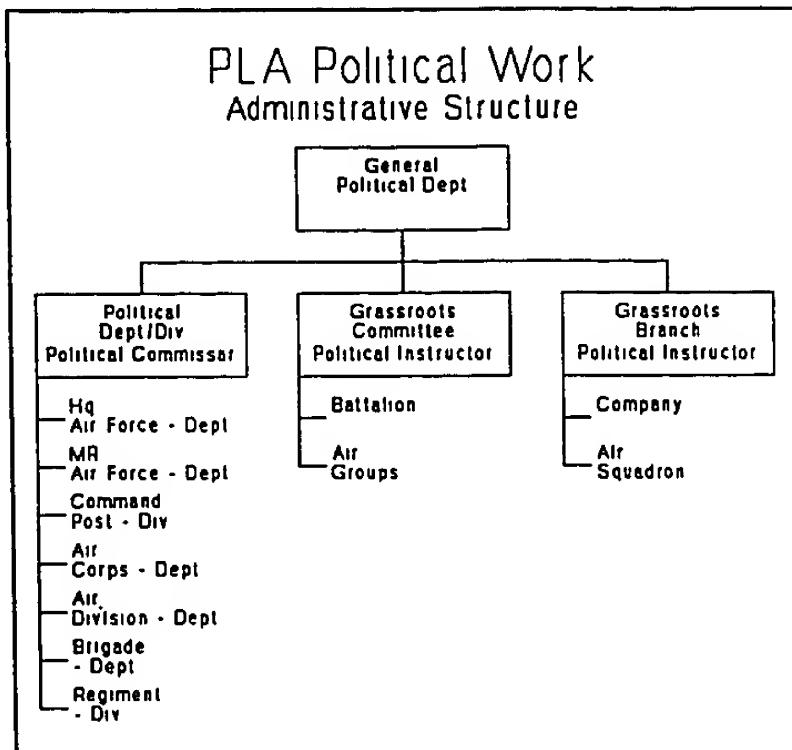


Figure 1

SECTION 23

AIR FORCE WEAPONS DEVELOPMENT

The Scientific Research Department (keyan bu) is the organization tasked with developing the PLAAF's weapons and equipment. At the MRAF Headquarters level, the Scientific Research Division (keyan chu) has some, but not all, of these responsibilities. The Scientific Research Department's responsibilities are as follows:

- Establish the organization to evaluate and make the PLAAF's weapons R&D plans and programs, and report their operational requirements, as well as their tactical and technical criteria, to higher authorities.
- Research and draft the PLAAF's weapons development technical policies, and drafts the necessary rules and regulations.
- Examine and report the development program in conjunction with the concerned ministries.
- Sign and monitor the development contract. The Scientific Research Department only became responsible for monitoring contracts in 1987, and now has representatives (along with those from the PLAAF Logistics Department's Procurement Department) in the factories and civilian research institutes. Previously, the Procurement Department was responsible for the acceptance tests, for monitoring the development phase, and receiving feedback from the units once the equipment was deployed; however, this has now become the Scientific Research Department's responsibility.
- Once the contract is awarded, the Scientific Research Department coordinates on the criteria (such as system and subsystem requirements, quality control, and performance), budget, schedule, and on any technical problems that occur during the development process. The requirements are based on the operational needs set forth by the PLAAF's units, by the General Staff Department's approval, by capability of the ministries to produce such systems, and by the money available.
- Assess penalties for contract violations. Normally, if there are any problems, there is simply consultation between the PLAAF and the ministry. However, if there is a large problem, it goes to the National Finalization Commission for arbitration.
- Responsible for the PLAAF's research and development tests and for the test flight work.
- Manage military use standards and measurement work.
- Evaluate and manage imported weapons for the PLAAF.

- Responsible for the PLAAF's portion of the national defense research and development budget and associated financial work. Until 1987, COSTIND (the Commission for Science, Technology, and Industry for National Defense) was responsible for this function. The money for equipment development comes from the State and now goes directly to the PLAAF rather than to the ministries. As a result, the PLAAF can be more forceful with the ministries to make them adhere to the
- PLAAF's requirements. Sometimes, the PLAAF must supplement the State's money with some of its own. The PLAAF cannot simply move funds from one project to another without approval from higher authorities.

TYPES OF AIR FORCE WEAPONS

In general terms, the PLAAF's weapons can be categorized into three types of systems: operational (zuozhan), command and control (zhihui kongzhi), and support (baozhang).

- Operational systems are divided into air-to-air, air-to-surface, surface-to-air, and surface-to-surface types of weapons, these include aircraft, airborne weapons, surface-to-air missiles, etc.
- Command and control systems include ground warning command (dimian yujing zhihui), airborne warning command (kongzhong yujing zhihui), communications, and automated control handling (zidonghua kongzhi chuli).
- Support systems include transport aircraft, refueling aircraft, reconnaissance and ECM aircraft, trainers, weapons maintenance, logistics support, etc.

WEAPONS DEVELOPMENT AND PRODUCTION CRITERIA

Although China operates on a five year plan, the PLAAF tried working on a three year plan, beginning in 1978. The 1st three year plan was 1978-1980, the 2nd was 1981-1983, and the 3rd was 1984-1986. However, the PLAAF made the decision in 1985 to change to a five year plan that corresponded with the State's five year plan. Therefore, the PLAAF's 1st five year plan (1986-1990) corresponded with the State's 7th five year plan.

Weapons development is divided into medium-long term plans and annual plans. Medium-long term plans are drawn up according to the four criteria below:

- General and specific national economic construction and national defense construction.
- Guidance set forth by the Military Commission.

- The national economic level and the economic and technical capability of national defense industries.
- Domestic and international S&T and weapons development trends.

All new programs to be placed in the medium-long term plan must have an evaluation of the combined economic and technical criteria, must have an evaluation report, must have a definite mission, and must be based on a definite medium-long term plan. The contents of the combined economic and technical evaluation includes the following:

- An analysis of operational use requirements and tactical and technical capability.
- Basic estimate of when the equipment is needed at the unit and how many to buy.
- A technical analysis of the possibility of achieving the desired results.
- An analysis of the development costs and budget and the necessary support requirements.
- Comparison with the same type of foreign equipment in terms of current levels and the development situation.

GENERAL PROCEDURES FOR WEAPONS DEVELOPMENT

There are five general procedures for developing weapons. Basically, the PLAAF submits a report to the General Staff Department, COSTIND, and the Military Commission requesting a certain weapon system. If the report is approved, it is put in the medium-long term or annual plan. The PLAAF then submits a request for proposal (RFP) to the appropriate ministries and/or foreign companies. Once the program is defined, the PLAAF and the contracting ministry do a joint report to the General Staff Department and COSTIND. Design and production finalization follow this. Altogether, there are three reports and three approvals during the five phase process.

THEORETICAL EVALUATION (LUNZHENG) PHASE

Based on the medium-long term plan and the annual plan, the Scientific Research Department's subordinate research institutes, units, and schools conduct a theoretical evaluation of the weapon system's operational performance requirements and tactical and technical criteria. This evaluation includes an analysis of the operational mission and objectives, the basic requirements of the system's components and important equipment, and the development schedule. A report is submitted to higher authorities, and, if approved, the process moves to the next phase.

PROGRAM (FANGAN) PHASE

This phase consists of submitting an RFP to the appropriate contractors (zhaobiao), and selecting a contractor (xuanding yanzhi danwei) based on a national unified plan and set guidance. Once the contractor is selected, the PLAAF's research institute(s) and military representatives at the production facility (jun daibiao chu) conduct a joint evaluation along with the contractor of the development program and of the development and implementation of a prototype/mockup (yangji). After the critical technology is decided, a development mission report (yanzhi renwu shu) is drafted on the basis of the development plan's feasibility. The report is submitted to higher authorities, and, if approved, the process moves to the next phase.

ENGINEERING DEVELOPMENT (GONGCHENG YANZHI) PHASE

Based on approval of the development mission report and the appropriate contract, the production unit is responsible for designing the weapon, and producing and testing a prototype/mockup. Testing normally takes 12-18 months. During this phase, the military representative reviews the program in terms of development and expenditures.

DESIGN FINALIZATION (SHEJI DINGXING) PHASE

Once the engineering development phase is completed and the weapon meets the design requirements, the military conducts tests at a unit or a testing base. Based on the results of these tests, the National Finalization Commission (guojia dingxing weiyuanhui) carries out design finalization testing. If these results are acceptable, the design is finalized. The senior members of the commission are the Minister of the Ministry of Aero-Space Industry the PLAAF Deputy Commander who is responsible for equipment and R&D. There are several other members, including the responsible deputy chief of staff, members of the Ministry of Aero-Space and/or relevant ministries, and the director of the Scientific Research Department. The PLAAF members also belong to a PLAAF Aviation Commission (hangkong bing weiyuanhui), which is chaired by same deputy commander as above. The day-to-day administrative affairs for design finalization and the PLAAF commission are handled by the Aviation Finalization Office (hangkong dingxing bangongshi/hangdingban).

PRODUCTION FINALIZATION (SHENGCHAN DINGXING) PHASE

On the basis of the design finalization, a set number of production examinations and tests are conducted. After they are completed, production finalization testing and production finalization are carried out. Production finalization is an important way for the nation to carry out a complete examination of a production batch, and to confirm whether or not the production batch meets the required standards. The production finalization organization then sends the necessary report to the appropriate authorities for approval. Finally, the equipment

is procured and turned over to the Equipment Department within the Headquarters Department to begin supplying the units.

MISSILE DEVELOPMENT

In 1958, China established air-to-air missile (AAM) and surface-to-air missile (SAM) ranges (bachang). The AAM range is north of Dingxin, Gansu Province. The range is divided into an airfield area, technical position area (jishu zhendi qu), and a test area (shiyang hang qu). The airfield area has a testing command post (shiyang zhihuisuo) and test equipment. The technical position area has over 20 buildings. In July 1970, the AAM Test Range (kongkong daodan shiyan bachang) came under PLAAF control and was later renamed the PLAAF 1st Test and Training Base (kongjun diyi shiyan xunlian jidi).

In November 1959, the PLAAF received its first K-5 AAMs from abroad. During the first half of 1960, China copied the K-5 and called it the PL-1 (pili-1). Following extensive testing, the State Council Special Weapons Design Finalization Commission (guowuyuan tezhong wuqi dingxing weiyuanhui) approved the PL-1's design in April 1964 for series production. Range tests for the PL-2 began in June 1964, and the PL-2 entered the inventory in 1967. In April 1980, the PL-3 AAM design was approved and entered production. In July 1986, the PL-5-2 AAM design was approved.

On 21 May 1959, the PLAAF SAM Training Base (kongjun dikong daodan budui xunlian jidi) was established, and on 1 July 1959 the PLAAF Technical Department (kongjun jishu bu) was established.

The SAM range is located near the AAM range. In July 1970, the range also came under PLAAF control, and was later renamed the PLAAF 2nd Test and Training Base (kongjun dier shiyan xunlian jidi).

Between October 1958 and January 1959, the PLAAF formed its first SAM unit, equipped with the Soviet SA-2. China began copying this SAM in 1959, calling it the HQ-1 (hongqi-1). HQ-1 testing took place between April 1963 and January 1965. In November 1964, the HQ-1 SAM design was approved and production began. The PLAAF received its first HQ-1 in April 1965. The HQ-2 (hongqi-2), which incorporated a longer range and an ECM capability, underwent testing from June 1965 to December 1966, while the first HQ-2 entered the inventory in March 1966. From the late-1960s to the mid-1970s, development

and finalization testing took place for the HQ-2A (hongqi-2Jia), the HY-5 (hongying-5), and the HQ-61 (hongqi-61). In September 1984, the Military Commission and State Council decided that a SAM was a priority one task (zhongdian zhi yi).*

In July 1986, the PLAAF had proposed its weapons requirements for the 7th five year plan. In 1987, it had already completed its report on the plans for weapons development in the year 2000.

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* The terms zhongdian zhi yi (focal point) is a key to determining which projects get emphasis in the five year plan.

APPENDIX A

AIR FORCE LEADERS 1949-1990

This section provides information, including the Standard Telegraphic Code (STC) for their names, on past and present PLA Air Force leaders at Headquarters Air Force (HqAF) and the Military Region Air Force (MRAF) Headquarters and their key Air Force assignments.

HEADQUARTERS AIR FORCE

Commander

Liu Yalou (Oct 49 - May 65)	0491/0068/2869
Commander, HqAF	Oct 49 - May 65
Wu Faxian	0702/3127/2009
Commander, HqAF	May 65 - Sept 71
Political Commissar, HqAF	Feb 57 - May 65
Deputy Pol Commissar, HqAF	Apr 50 - Feb 57
Ma Ning	7456/1337
Commander, HqAF	May 73 - Apr 77
Dep Commander, Lanzhou MRAF	
Zhang Tingfa	1728/1694/4099
Commander, HqAF	Apr 77 - Jul 85
Pol Commissar, HqAF	Nov 75 - Apr 77
Dep Commander, HqAF	Mar 62 - Nov 75
Chief of Staff, HqAF	Mar 62 - (Concurrently)
Wang Hai	3769/3189
Commander, HqAF	Jul 85 - Present
Dep Commander, HqAF	Nov 82 - Jul 85
Commander, Guangzhou MRAF	- Nov 82

Political Commissar

Xiao Hua Pol Commissar, HqAF	5135/5478 Oct 49 - Feb 57
Wu Faxian Commander, HqAF Pol Commissar, HqAF Dep Pol Commissar, HqAF	0702/3127/2009 May 65 - Sept 71 Feb 57 - May 65 Apr 50 - Feb 57
Yu Lijun Pol Commissar, HqAF (Concurrently CAAC Political Commissar) Dep Pol Commissar, HqAF Pol Commissar, Nanjing MRAF	0151/4539/6855 May 65 - Sep 68 May 60 May 60 (Concurrently)
Wang Huiqiu Pol Commissar, HqAF Dep Pol Commissar, HqAF	3769/6540/3808 Sep 68 - May 73 May 60
Fu Chuanzuo Pol Commissar, HqAF Pol Commissar, Wuhan MRAF	0265/0278/0155 May 73 - Nov 75 Sep 50
Zhang Tingfa Commander, HqAF Pol Commissar, HqAF Dep Commander, HqAF Chief of Staff, HqAF	1728/1694/4099 Apr 77 - Jul 85 Nov 75 - Apr 77 Mar 62 - Nov 75 Mar 62 - (Concurrently)
Gao Houliang Pol Commissar, HqAF Dep Pol Commissar, HqAF Dep Commander, Nanjing MRAF	7559/0624/5328 Apr 77 - Jul 85 May 73
Zhu Guang Pol Commissar, HqAF Dep Pol Commissar, Shenyang MRAF	2612/0342 Jul 85 - Present

Deputy Commanders

Chang Qiankun Dep Commander, HqAF (Concurrently Scientific Research Dept Director in 1958)	1728/0051/0981 Nov 49 - (Concurrently Scientific Research Dept Director in 1958)
Wang Bi Dep Commander, HqAF	3769/1732 Dec 50 -
Wang Bingzhang Dep Commander, HqAF Chief of Staff, HqAF	3769/4426/3864 Feb 53 Feb 53 (Concurrently)
Liu Zhen Dep Commander, HqAF Commander, Dongbei MRAF	0491/7201 Feb 54 Feb 54 (Concurrently)
Xu Shenji Dep Commander, HqAF	1776/3234/0679 Mar 55
Cao Lihuai Dep Commander, HqAF (Concurrently Guangzhou MRAF Commander & HqAF Training Department Director)	2580/6849/2037 Jun 56 (noted in 77)
Cheng Jun Dep Commander, HqAF (Concurrently Technical Department Director in 1959) Dep Commander, Air Defense Force	2052/6874 Aug 57 (noted in 77)
Tan Jiashu Dep Commander, HqAF Dep Commander, Air Defense Force	6223/1367/6615 Aug 57
Xue Shaoqing Dep Commander, HqAF	5641/1421/0615 Nov 60 (noted in 73)
Zhang Tingfa Commander, HqAF Pol Commissar, HqAF Dep Commander, HqAF Chief of Staff, HqAF	1728/1694/4099 Apr 77 - Jul 85 Nov 75 - Apr 77 Mar 62 - Nov 75 Mar 62 - (Concurrently)

Kuang Rennong Dep Commander, HqAF (Concurrently CAAC Director in 1962)	6782/0117/6593 Jun 62 (noted in 73)
Luo Yuanfa Dep Commander, HqAF Commander, Beijing MRAF Commander, Nanjing MRAF	5012/0337/4099 Sep 68 Dec 51
Zeng Guohua Deputy commander, HqAF Commander, Beijing MRAF Dep Commander, Beijing MRAF	2582/0948/5478 Dec 68
Zou Yan Dep Commander, HqAF Dep Commander, Shenyang MRAF	6760/3508 May 73
Zhang Jihui Dep Commander, HqAF	1728/4480/1979 May 73
Wu Fushan Dep Commander, HqAF Commander, Guangzhou MRAF Pol Commissar, GuangZhou MRAF Dep Pol Commissar, GuangZhou MRAF	0702/1381/0810 Nov 75 (noted in 77)
He Tingyi Dep Commander, HqAF	0149/1694/0001 Nov 75 (noted in 77)
Wang Dinglie Dep Commander, HqAF Chief of Staff, HqAF Dep Commander, Guangzhou MRAF Dep Commander, Jinan MRAF	3769/1353/3525 Nov 82
Wang Hai Commander, HqAF Dep Commander, HqAF Commander, Guangzhou MRAF	3769/3189 Jul 85 - Present Nov 82 - Jul 85 - Nov 82
Li Yongtai Dep Commander, HqAF Commander, Wuhan MRAF	2621/3057/3141 Nov 82 - Present

Yu Zhenwu	0060/2182/2976
Dep Commander, HqAF	Jul 85 - Present
Commander, Guangzhou MRAF	Nov 82 - Jul 85
Lin Hu	2651/5706
Dep Commander, HqAF	Sep 85 - Present
Dep Commander, Guangzhou MRAF	
Liu Zhitian	0491/1807/3944
Dep Commander, HqAF	Sep 87 - Present
Commander, Lanzhou MRAF	- Sep 87
Dep Commander, Beijing MRAF	

Deputy Political Commissars

Wang Bi Deputy Pol Commissar	3769/1732 Nov 49
Wu Faxian Commander, HqAF Political Commissar, HqAF Deputy Pol Commissar, HqAF	0702/3127/2009 May 65 - Sept 71 Feb 57 - May 65 Apr 50 - Feb 57
Yu Lijin Pol Commissar, HqAF Dep Pol Commissar, HqAF Pol Commissar, Nanjing MRAF (Concurrently Nanjing MRAF Political Commissar)	0151/4539/6855 May 65 - Sep 68 May 60 May 60
Wang Huiqiu Pol Commissar, HqAF Dep Pol Commissar, HqAF (Concurrently Political Department Director)	3769/6540/3808 Sep 68 - May 73 May 60
Gao Houliang Pol Commissar, HqAF Dep Pol Commissar, HqAF Dep Commander, Nanjing MRAF (Concurrently Political Department Director)	7559/0624/5328 Apr 77 - Jul 85 May 73
Du Yufu Dep Pol Commissar, HqAF Dep Commander, Nanjing MRAF	2629/3768/4395 May 73
Huang Liqing Dep Pol Commissar, HqAF Pol Commissar, Shenyang MRAF	7806/4539/3237 May 75 (noted in 77)
Kuang Fuzhao Dep Pol Commissar, HqAF	2568/0126/0340 Nov 75 (noted in 77)
Liu Shichang Dep Pol Commissar, HqAF Dir, Pol Department, HqAF Dep Pol Commissar, Guangzhou MRAF	0491/0013/2490 Jan 78

Liu Zhao	0491/6856
Dep Pol Commissar, HqAF	May 83
Gao Xingmin	7559/5281/3046
Dep Pol Commissar, HqAF	Sep 85 - Present
Pol Commissar, Shenyang MRAF	
Xu Lefu	6079/2867/1133
Dep Pol Commissar, HqAF	1988 - Present
Pol Commissar, Beijing MRAF	
Pol Commissar, Shenyang MRAF	
Dep Pol Commissar, Shenyang MRAF	

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Chief of Staff (Director, Headquarters Department)

Wang Bingzhang (Oct 49/Concurrently CV in 53)	3769/4426/3864
Zhang Tingfa (Mar 62/Concurrently CV)	1728/1694/4099
Liang Pu	4731/3877
Wang Dinglie	3769/1353/3525
Ma Zhanmin	7456/0594/3046
Yu Zemin	0060/3419/3046

Director, Political Department

Xiao Hua (Oct 49/Concurrently PC)	5135/5478
Wu Faxian (Apr 50/Concurrently Dep PC)	0702/3127/2009
Wang Huiqiu (Mar 60/Concurrently Dep PC)	3769/6540/3808
Huang Yukun	7806/3768/2492
Gao Houliang (May 73/Concurrently Dep PC)	7559/0624/5328
Liu Shichang	0491/0013/2490
Ye Songsheng	0673/2646/4141
Bi Hao	3968/4110
Gao Xingmin (Concurrently Dep PC)	7559/5281/3046
Ding Wenchang	0002/2429/2490

MILITARY REGION AIR FORCES

Shenyang MRAF (Includes Dongbei MRAF Aug 50 - May 55)

Commander

Duan Suquan (Aug 50)	3008/5685/2938
Liu Zhen (Feb 54/Concurrently HqAF CV)	0491/7201
Zhou Chiping	0719/6375/5493
Zeng Guohua	2582/0948/5478
Wang Yuhuai	3769/3022/3232
Cao Shuangming	2580/7175/2494
Commander, Shenyang MRAF	
Deputy Commander, Shenyang MRAF	

Political Commissar

Zhou Chiping	0719/6375/5493
Huang Liqing	7806/4539/3237
Zhang Yonggeng	1728/7167/5105
Mao Yuanxin	3029/6678/2450
Xu Lefu	7079/2867/1133
Zhao Lantian	6392/5695/3944
Gao Xingmin	7559/5281/3046
Liu Cunxin	0491/1317/0207
Political Commissar, Shenyang MRAF	
Deputy Commander, Shenyang MRAF	

Deputy Commanders

Hu Qicai	5170/1142/2088
Zeng Guohua	2582/0948/5478
Gao Feng	7559/7720
He Zhenya	0149/2182/0068
Lu Liping	0712/7812/1627
Liu Guozhu	0491/0948/2691
Zou Yan	6760/3508
Cai Yong	5591/3057
Chang Zhonglian	1603/0112/6647
Cao Shuangming	2580/7175/2494
Sun Jinghua	1327/2529/5478
Liu Cunxin	0491/1317/0207
Jiang Zhen	3068/7201
Zeng Guangfu	2582/1639/1381

Deputy Political Commissars

Wang Degui	3769/1795/6311
Liu Jinping	0491/6930/1627
Huang Yukun	7806/3768/2492
Cheng Ming	4453/2494
Zhang Yonggeng	1728/7167/5105
Qiu Renhua	6726/0088/5478
Zhao Qilin	6392/0366/2651
Yang Dalun	2799/1129/0243
Xu Lefu	6079/2867/1133
Zhang Shaohong	1728/1421/5725
Zhu Guang	2612/0342
Zhang Mengshan	1728/1125/1472
Ding Keming	0002/0344/2494
Zhang Zhizeng	1728/1807/1073
Shao Rongtang	6730/2837/2768

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Beijing MRAF (Includes Huabei MRAF Oct 50 - May 55)

Commander

Xu Decao (Oct 50)	1776/1795/2347
Duan Suquan	3008/5685/2938
Luo Yuánfa	5012/0337/4099
Li Jitai	2621/7139/3141
Liu Yudi	0491/3768/1029
Commander, Beijing MRAF	
Korean War veteran	

Political Commissar

Qi Yuanwo	3344/6678/3259
Zheng Daichun	1728/4102/2504
Zhao Lantian	6392/5695/3944
Xu Lefu	6079/2867/1133
Zhao Bingyao	6392/3521/5069

Deputy Political Commissar, Beijing MR

Deputy Commanders

Li Zhongquan	2621/0022/2938
Li Jitai	2621/7139/3141
Fang Ziyi	2455/1311/5065
Lu Maotang	0712/5399/1016
Mi Zhigao	4717/1807/7559
Sun Duanfu	1327/4551/1133
Ren Dazhi	0117/1129/1807
Yao Xian	5069/0341
Liu Guangyu	0491/0342/5940
Xu Dengkun	0776/4098/2492
Qiao Ziyang	6329/1311/2254
Liu Zhitian	0491/1807/3944
Chu Futian	5969/4395/3944

Deputy Political Commissars

Zhang Baichun	1728/4102/2504
Cui Wenbin	1508/2429/2430
Xiang Xiaoshu	0686/1321/2579
Du Jingqiu	2629/6975/4428
Ge Zhenyue	5514/2182/1471
Sun Shufeng	1327/2885/1496
Yang Zhifu	2799/1807/4395
Zheng Lansun	6774/5695/5549
Zhao Bingyao	6392/3521/5069

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Lanzhou MRAF (Includes Xibei MRAF Dec 51 - May 55)

Commander

Luo Yuanfa (Dec 51)	5012/0337/4099
Yang Huanmin	2799/3562/3046
Liu Maogong	0491/2021/0501
Xu Dengkun	1776/4098/2492
Liu Zhitian	0491/1807/3944
Sun Jinghua	1327/2529/5478

Commander, Lanzhou MRAF
Deputy Commander, Shenyang MRAF
Korean War veteran

Political Commissar

Guan Shengzhi	7070/4141/1807
Liu Zhen	0491/6966
Wang Pingshui	3769/1627/3055
Wei Zhiming	7614/1807/2494
Yang Yongbin	2799/3057/2430
Zheng Baosen (1990)	6774/1404/2773

Political Commissar, Lanzhou MRAF
Deputy Commander, Lanzhou MRAF
Deputy Commander, Fuzhou MRAF

Deputy Commanders

Zhang Xianyue	1728/6343/4766
Yuan Xuekai	5913/1331/0418
Fang Shengpu	2455/0581/2528
Fang Ziyi	2455/1311/5065
Yang Sifu	2799/1835/4389
Liu Guanghan	0491/0342/3352
Xu Dengkun	1776/4098/2492
Ma Ning	7456/1337
Lin Jigui	2651/1015/6311
Yao Xian	5069/0341
Chen Hailin	7115/3189/2651
Mi Shengshan	4717/4141/1472
Zheng Baosen	6774/1405/2773
Ma Zhanmin	7456/0594/3046
Liu Shunyao	0491/7311/1031

Deputy Political Commissars

Zhao Guangyuan	6392/0342/6678
Cheng Ming	4453/2494
Liu Zhen	0491/6966
Wang Shaoyuan	3769/4801/3220
Li Daozhi	2621/6670/0037
Wei Zhiming	7614/1807/2494
Wu Jing	2976/7231
Yang Dalun	2799/1129/0243
Wang Wen	3769/2429
Xie Xuechou	6200/7185/3985
Pan Jinghe	3382/2529/0735
Chang Yu	1603/5940

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Nanjing MRAF (Includes Huadong MRAF Aug 50 - May 55)

Commander

Nie Fengzhi (Aug 50)	5119/7364/2535
Cheng Huatang	7115/5478/1016
Liu Maogong	0491/2021/0501
Yang Huanmin	2799/3562/3046
Yuan Bin	5913/1755
Jiang Yutian	1203/3768/3944

Commander, Nanjing MRAF

Deputy Commander, Nanjing MRAF

Political Commissar

Wang Jicheng (Aug 50)	3769/7162/2052
Yu Lijin (Mar 60/Concurrently HqAF PC)	0151/4539/6855
Jiang Tengjiao	3068/7506/5754
Liao Guanxian	1675/0385/6343
Xiao Qian	5135/0467
Li Zhongquan	2621/0022/2938
Zheng Zhubo	6774/4554/3134
Zhao Zhao	6392/2507

Political Commissar, Nanjing MRAF

Deputy Commanders

Zhang Fan	1728/5672
Yang Huanmin	2799/3562/3046
Nie Fengzhi	5119/6364/2535
Chen Huating	7115/5478/1016
Gao Houliang	7559/0624/5328
Cai Yong	5591/3057
Liu Huan	0491/3883
Zhou Jianping	0719/1696/1627
Xie Bin	6200/2430
Du Yufu	2629/3768/4395
Hou Hongjun	0186/3163/6511
Li Zhongquan	2621/0022/2938
Jiang Yutian	1203/3768/3944
Guo Jian	6753/0256
Han DeCai	7281/1795/1752
Yuan Guohuai	5373/0948/6540

Deputy Political Commissars

Long Qian	7893/3383
Long Fucai	7893/4395/2088
Li Chiran	2621/6375/3544
Jiang Tengjiao	3068/7506/5754
Wang Shaoyuan	3769/4801/3220
Yu Yinglong	0060/2019/7893
Li Daozhi	2621/6670/0037
Peng You	1756/3945
Zhao Qilin	6392/0366/2651
Zhang Chunqing	1728/4783/7230
Song Chaoshi	2646/2600/6108

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Guangzhou MRAF (Includes Zhongnan MRAF Sep 50 - May 55)

Commander

Liu Zhen (Sep 50)	0491/7201
Cao Lihuai (Jun 56/Concurrently HqAF CV)	2580/6849/2037
Wu Fushan	0702/1381/0810
Wang Pu	3769/3877
Wang Hai	3769/3189
Yu Zhenwu	0060/2182/2976
Wu Jiyuan	2967/4949/0337
Liu Heqiao	0491/7729/5062

Commander, Guangzhou MRAF

Deputy Commander, Guangzhou MRAF

Political Commissar

Wu Fushan	0702/1381/0810
Liu Jinping	0491/6930/1627
Long Daoquan	7893/6670/2938
Zhu Yunqian	2612/0061/6197
Ren Qiu	0117/3808
Liu Feng	0491/6912
Zhang Zhenxian	1728/2182/0341

Political Commissar, Guangzhou MRAF

Political Commissar, Jinan MRAF (To Guangzhou in 1987/88)

Deputy Commanders

Yang Huanmin	2799/3562/3046
Huang Weihua	7806/3555/5478
Zhu Yanqian	2612/0061/6197
Huang Lif	7806/7207
Zhang Xisan	1728/6007/0005
Wang Dinglie	3769/1353/3525
Fan Zhexiang	2868/0772/4382
An Zhimin	1344/1807/2404
Lin Hu	2651/5706
Li Chengchun	2621/2052/2504
Zhang Xianzhang	1728/2009/4545
Liu Heqiao	0491/7729/5062
Fang Ziyi	2455/1311/5065
Lu Yukun	7627/3768/2492
Yang Zhenggang	2799/2973/0474

Deputy Political Commissars

Wu Fushan	0702/1381/0810
Li Shian	2621/0013/1344
Liu Shichang	0491/0013/2490
Jiaq Hongguang	3542/4767/0342
Ye Songsheng	0673/2646/4141
Zhu Yunqian	2612/0061/6197
Ren Qiu	0117/3808
Guo Yongchang	6753/3057/2490
Xia Pingxi	1115/1456/6007
Chen Gang	7115/0474
Chang Yu	1603/5940
Li Yuan	2621/3293

Jinan MRAF (Established Jun 67)

Commander

Wu Zongxian (Jun 67)	0702/1350/0341
Wang Zixiang	3769/1311/4382
Lin Jigui	2651/1015/6311
Commander, Jinan MRAF	
Deputy Commander, Lanzhou MRAF	

Political Commissar

Li Bo (Jun 67)	2621/0514
Guan Shengzhi	7070/4141/1807
Wang Pingshui	3769/1627/3055
Zhang Yonggeng	1728/7167/5105
Zhang Zhenxian	1728/2182/0341
Yang Hanwen	2799/3352/2429
Political Commissar, Jinan MRAF	
Deputy Political Commissar, Jinan MRAF	

Deputy Commanders

Wang Dinglie	3769/1353/3525
Tan Youfu	6223/2589/4395
Liu Ying	0491/5391
Wang Xiangxiong	3769/7449/7160
Liu Hetian	0491/7729/3944
Liu Huanqi	0491/3562/1477
Xia Boxun	1115/0130/8113
Ji Xuefan	1323/1331/5400
Zeng Youcheng	2582/1635/6134
Song Wenzhou	1345/2429/3166

Deputy Political Commissars

Li Zhensheng	2621/2182/5116
Yu Yinglong	0060/2019/7893
Gong Youyuan	7895/0645/3293
Luo Ping	5012/1627
Wang Yun	3769/0061
Yang Dalun	2799/1129/0243
Shi Hongrui	1597/3163/3843
Yang Hanwen	2799/3352/2429

Chengdu MRAF (Established Aug 85)

Commander

Hou Shujun	0186/2579/6511
Commander, Chengdu MRAF	Aug 1985
Commander, Fuzhou MRAF	
Commander, Kunming MRAF Command Post (During 79 Sino-Vietnam border war)	
Korean War veteran	

Political Commissar

Feng Yingshan (Aug 85)	7458/2019/1472
Bi Hao	3968/4110
Political Commissar, Chengdu MRAF	
Dir, Political Department, HqAF	

Deputy Commanders

Xiong Zidan	3574/1311/0030
Men Guicheng	7024/6311/2052

Deputy Political Commissars

Huang Daping	7806/6671/5493
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Wuhan MRAF (Includes Xinan MRAF Sep 50 - May 55; Abolished in Oct 85)

Commander

Fu Chuanzuo (Sep 50)	0265/0278/0155
Liu Cunxin	0491/1317/0207
Li Yongtai	2621/3057/3141
Wu Jiyuan	2976/4949/0337

Political Commissar

Yu Fei (Sep 50)	0151/7236
Long Daoquan	7893/6670/2938
Xiao Qian	5135/0467
Liao Guanxian	1675/0385/6343
Kang Xinghuo	1660/2502/3499

Deputy Commanders

Wang Zuoyao	3769/0155/1031
Wang Degui	3769/1795/6311
Fang Huai	2455/2849
Zhao Lantian	6392/5695/3944
Li Shengcai	2621/4141/6299
Huang Jingchen	7806/1777/3819
Cai Yong	5591/3057
Liu Feng	0491/0023
Fang Ming	2455/6900
Xiong Zidan	3574/1311/0030
Wu Changyou	2976/7022/0645
Li Xiangmin	2621/0686/3046
Xiao Jianzhang	5135/0256/4545
Zhang Ruihai	1728/3843/5676

(Currently Director of China United Airlines)

Deputy Political Commissars

Chen Hao	7115/3185
Xiao Qian	5135/0467
Liao Guanxian	1675/0385/6343
Wei Jinglian	5898/2529/3425
Xie Changlin	6043/7022/2651
Xing Yongning	6717/3057/1337
Gao Dexiang	7559/1795/5980
Li Xiangmin	2621/0686/3046
Shi Hongrui	1597/3163/3843

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Fuzhou MRAF (Established in Jul 58; Abolished in Oct 85)

Commanders

Nie Fengzhi (Jul 58)	5119/7364/2535
Chen Huatang	7115/5478/1016
Xie Bin	6200/2430
Yang Silu	2799/1835/4389
Hou Shujun	0186/2579/6511

Political Commissar

Li Shian	2621/0013/1344
Wei Zuzhen	7279/4371/3791
Huang Yukun	7806/3768/2492
Wang Jingmin	3769/7234/2404
Zhang Xiyong	1728/1585/1661
Feng Yingshan	7458/2019/1472

Deputy Commanders

Yuan Bin	5913/1755
Fang Shengpu	2455/0581/2528
Liu Peng	0491/7720
Xie Bin	6200/2430
Jiang Ting	5592/0080
Wu Yuanren	0702/0337/0117
Liu Zishuang	0491/5261/7175
Zhang Shijie	1728/1395/2638
Cai Yong	5591/3057
Wang Chengmei	3769/2052/5019
Yuan Guohui	5373/0948/5450
Li Lanmiao	2621/5695/5399
Zheng Baosen	6774/1405/2773

Deputy Political Commissars

Luo Weidao	5012/4850/6670
Pei Zhigeng	5952/1807/5087
Deng Dongzhe	6772/2639/0772
Xie Xiyu	6200/6932/3768
Zha Quanlun	2686/0356/0243
Xiao Daosheng	5135/6670/3932
Chen Xingchou	7115/5281/3985
Lin Qing	2651/7230
Ding Lianyun	0002/3353/8661
Huang Daping	7806/6671/5493

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APPENDIX B

NAVAL AVIATION

Naval Aviation (haijun hangkong bing/haihang) was established in August 1950 as a separate administrative department within the Navy Headquarters and as a separate PLA Navy operational branch (bingzhong). Naval Aviation's first flying school was founded in 1956 at Changzhi, Shanxi Province. Naval Aviation, with over 1,000 aircraft in its inventory, consists of the headquarters at Liangxiang Airfield near Beijing and units assigned to the three fleets.

Fleet aviation (jiandui hangkong bing) includes flying divisions (feixing shi), flying regiments (feixing tuan), flying groups (feixing dadui), flying squadrons (feixing zhongdui), radar troops (leida bing), communications troops (tongxin bing), logistics troops (houqin bing), and antiaircraft artillery (gaoshepao bing) troops, and technical reconnaissance units (jizhen budui). Naval Aviation also has aircraft assigned to independent regiments (duli tuan) and groups (duli dadui).

Naval Aviation's main tasks are to protect China's coastal air space, support the Navy fleets and the Army, protect China's ocean resources, escort fishing boats and convoys, and provide search and rescue operations. Naval Aviation also has the mission of liberating islands.

COMMAND STAFF

The command staff at Headquarters Naval Aviation consists of the following personnel (the commander is also a PLA Navy deputy commander):

- Commander (vice admiral - 2 star)
- Political commissar
- Deputy commander(s)
- Chief of staff (Director, Headquarters Department)
- ~~- Director, Political Department~~
- Director, Logistics Department.

Headquarters Naval Aviation also has a Party Committee (dangwei) and a Party Standing Committee (dangwei changwei). The Standing Committee consists of the members of the command staff, and the Party Committee consists of the members of the Standing Committee plus the commander and political commissar of each Fleet Naval Aviation Headquarters and directly subordinate unit (zhishu budui).

ADMINISTRATIVE STRUCTURE

The administrative structure for Naval Aviation and the PLAAF are similar with the exception of aircraft maintenance. While HqAF has four first level administrative departments -- Headquarters (siling bu), Political (zhengzhi bu), Logistics (houqin bu); and Aeronautical Engineering (hangkong gongcheng bu) -- Headquarters Naval Aviation only has the first three. Like the PLAAF, the Headquarters Department is responsible for training, operations, intelligence, organization, equipment, etc. The Political Department is responsible for Party affairs, cultural training, and propaganda. The Logistics Department is responsible for aircraft maintenance and logistics support. Although Naval Aviation's maintenance function has been incorporated into the Logistics Department, there is still a separate aviation maintenance (jiwu) element at the fleet and division/base level.

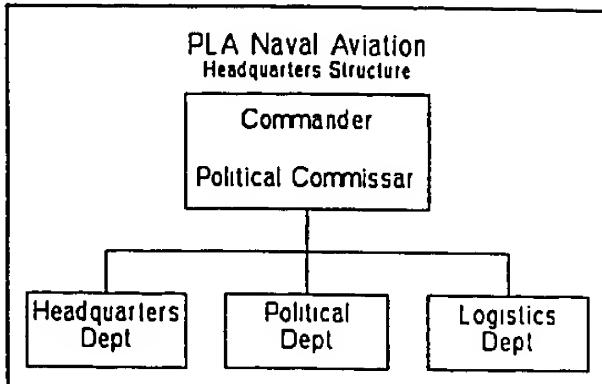


Figure 1

OPERATIONAL STRUCTURE

Unlike the PLAAF, where Military Region Air Force (MRAF) commanders are also deputy Military Region commanders, none of the three fleet Naval Aviation commanders are fleet deputy commanders. Another difference is that while the PLAAF has some Air Corps (jun/ kongjun jun) between the division and MRAF Headquarters or HqAF level, Naval Aviation does not have any Air Corps. As a result, the chain of command goes directly from Headquarters Naval Aviation (or fleet Headquarters) to the division.

PILOT TRAINING

Cadets at the Changzhi and Jinxi Flying Academies (feixing xueyuan) are selected from high school students who pass the national college entrance examination and the flight school examination. Training consists of three phases (sanji peixun tizhi) -- flying academy (feixing xueyuan) training regiment (xunlian tuan), and operational regiment (zuozhan tuan). The cadets graduate after four years with a Bachelor of Flight degree and 300 flying hours.

After graduation from the flying academy, pilots go directly to a unit where they can be awarded wings for one of four pilot ratings. Following 2-3 years in a training regiment, the pilots can become a third grade pilot (sanji feixingyuan) if they have achieved the required technical level. Upon completion of this training, which takes 2-3 years, they are assigned to an operational unit where they can become second grade pilots (erji feixingyuan)

by flying in day and night IFR (zhou ye fuza qixiang), maintaining flying safety, and reaching a certain proficiency level. Next, if they have conducted combat and training missions under day and night IFR conditions, have flown a certain number of hours, have reached the level of instructor pilot and controller, and have maintained flying safety, then they can become a first grade pilot (yiji feixingyuan). Finally, they can become a special grade pilot (teji feixingyuan) if they have already been approved as a first grade pilot, have made special achievements in combat, training, and test flights, and have maintained flying safety.

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APPENDIX C

CHINESE-PRODUCED AIRCRAFT

One of the more difficult problems the PLAAF faced in the beginning was how to handle the aviation industry which in 1949 was composed mainly of 32 military aircraft maintenance facilities and 4,700 workers. The Air Force initially proposed that it would transfer to the Ministry of Heavy Industry those factories which had a manufacturing capability. It was soon evident that repair and maintenance functions could not be separated from manufacturing. The PLAAF eventually surrendered most of the factories with the understanding that it could take back some of them once the aviation industry began to develop. It did precisely that between 1955 and 1957 when it resumed control of six repair factories.

Soviet civilian aeronautical assistance eventually led to the formation of the Third Ministry of Machine Industry (sanji bu or 3rd MMI). Its primary task was the manufacture of military aircraft, although in principle the 3rd MMI also proposed to make civilian aircraft. For many years, however, its only client was the PLAAF. Because of the early Soviet influence, coupled with China's political and economic position in the world during the 1960 and 1970s, virtually every aircraft in the PLAAF's inventory today is a copy of a Soviet aircraft.

AVIATION MINISTRY

From the beginning of the People's Republic, the PLAAF and Ministry of Aviation Industry have had an intertwined relationship. For example, one of the Aviation Ministry Bureau's first Deputy Directors was PLAAF Deputy Commander Wang Bi, while another Deputy Commander, Xue Shaoqing, was a Vice Minister of the Ministry of Aviation Industry in the early 1960s. This trend continued in the 1980s, when former PLAAF test pilot and hero Wang Ang was a Vice Minister. Shown below is a short history of the Ministry of Aviation Industry's early years:

- In April 1951, the Ministry of Heavy Industry established the Aviation Industry Bureau/4th Bureau (hangkong gongye ju/di 4 Ju) in Shenyang. This bureau moved to Beijing in April 1952.
- In April 1952, the 2nd Ministry of Machinery Industry (erji bu) was established and the Aviation Industry Bureau/4th Bureau moved to this Ministry as the 4th Bureau.
- In 1950, the PLAAF transferred 16 repair factories to the Aviation Industry Bureau. In September 1956, the decision was made to transfer the repair of all aircraft from the Aviation Industry Bureau back to the PLAAF. This was completed by 1958.

- In February 1958, the 1st, 2nd, and Electronics Industry Ministries merged as the 1st Ministry of Machine Industry. The Aviation Industry Bureau/4th Bureau changed from the 2nd to the 1st Ministry.
- In December 1959, the National Defense Industry Commission (guogang gongye weiyuanhui) was established.
- In September 1960, the 1st Ministry of Machine Industry (yiji bu) split into the 1st and 3rd Ministry of Machine Building. The Aviation Industry Bureau/4th Bureau moved from the 1st to the 3rd Ministry.
- In September 1963, the 3rd Ministry of Machine Industry split into the 3rd, 5th, and 6th Ministries of Machine Industry. The 3rd Ministry (sanji bu) became the Ministry of Aviation Industry. This term is still commonly used in reference to the Aviation Ministry.
- The aviation industry did not succeed in clarifying its subordination to the State Council rather than the Air Force until early 1972.
- The 3rd Ministry of Machine Industry was renamed the Ministry of Aviation Industry (MAI/hangkong gongye bu) during the early economic reforms of the 1980s. The change reflected a shift from primarily producing military aircraft to a market-oriented interest in manufacturing civilian aircraft and products.
- In July 1988, the Ministry of Aviation Industry and the Ministry of Astronautics (formerly the 7th Ministry of Machine Building) merged to become the Ministry of Aero-Space Industry (MAS/hangkong hangtian gongye bu). In reality, however, they remain two separate ministries except at the highest administrative levels.

PLAAF TEST FLIGHT UNITS

In the 1950s, the PLAAF loaned pilots to the Aviation Industry Bureau to test fly new aircraft. In June 1956, the Flight Research Academy (feixing yanjiuyuan) was established with support from the Soviet Union. In July 1961, it changed to a Flight Research Institute (feixing yanjiusuo). In the beginning, the Research Institute belonged to the First Ministry of Machine Industry. In September 1960, it was transferred to joint control by the Third Ministry of Machine Industry, the National Defense Science Commission (guofang kewei), and the PLAAF. From August 1969 to August 1973, the PLAAF took control as the PLAAF Test Flight Base (kongjun shifei jidi), and the PLAAF formed a Test Flight Regiment (shifei tuan). In August 1973, the Test Flight Base reverted to the Third Ministry of Machine Industry and changed its name back to the Test Flight Research Institute (shifei yanjiusuo). The Test Flight Regiment became subordinate to the Research Institute leadership, but the structure remained under the PLAAF.

Between 1973 to April 1974, the PLAAF formed test flight units at the following Ministry of Aviation Industry aircraft factories:

- Test Flight Regiment at Shenyang (112 Factory), which later became the 1st Test Flight Group (diyi shifei dadui)
- (Probable 2nd) Test Flight Group at Harbin (122 Factory)
- 3rd Test Flight Group at Chengdu (132 Factory)
- (Probable 4th) Test Flight Group at Nanchang (320 Factory)
- (Probable 5th) Test Flight Group at Anshun (162 Factory)
- The 6th Test Flight Group was later formed at the Shaanxi Aircraft Factory (182 Factory) in Hanzhong, Sichuan Province, which makes the Yun-8
- In the late 1980s, the PLAAF Test Flight Regiment was located at the Ministry of Aerospace Industry's Flight Test Center at Yanliang

CHINA'S EARLY AIRCRAFT

The Soviet Union also had a tremendous impact on the development of China's aviation industry. In July 1950, China bought its first batch of MIG-15s and MIG-15BIs. In December 1953, the Soviet Union agreed to give China production rights to the MIG-15Bis and YAK-18 Trainers, and the Soviets would provide the assembly kits. However, in July 1960, the Soviet Union notified China it was withdrawing all of its specialists and canceling all of its contracts. At the same time Soviet aircraft were being copied during the 1950s and 1960s, China began designing its own aircraft.

The first batch of aircraft produced in China were copies (fangzhi) of the Soviet YAK-18, which the Chinese later called the CJ-5 (chujiao-5). These were produced at Nanchang after ~~the~~ contract was signed in July 1954. The first PLAAF CJ-5s were assigned to the 6th Aviation School in October 1954. Following this, Nanchang designed the CJ-6, which entered the PLAAF Aviation School inventory in 1962.

The PLAAF's first ground attack aircraft were copies of the Soviet-produced IL-10. In 1958, Nanchang began designing a new ground attack aircraft, which was initially called the xiongying (STC 7160/7751) 302, but was later changed to the Qiang-5 (A-5). The first batch entered the PLAAF inventory in December 1969. On 7 January 1972, an A-5 dropped its first nuclear weapon.

The PLAAF's first bomber was the Soviet-produced TU-2. The first Soviet-produced IL-28 light bomber entered the inventory in October 1952, and the first TU-4 medium bomber

entered the inventory in March 1953. The first Soviet-produced TU-16 medium bomber entered the PLAAF in September 1959. Thereafter, China modified the IL-28's design and produced it in Harbin as the B-5, which entered the PLAAF in August 1967. The TU-16 was modified and produced in Xian as the B-6, which entered the inventory in February 1969.

The F-6-3, Zhi-5, and A-5 were developed during the chaotic Cultural Revolution when quality control measures completely broke down. As a result, there were numerous problems. Therefore, in November 1975, the Military Commission ordered all of these aircraft to be returned to the factory for overhaul.

CHINESE AIRCRAFT DESIGNATORS

The following list shows Chinese-produced aircraft and their status as of 1990, including their NATO designator and Chinese name:^{*}

<u>DESIGNATOR/</u> <u>COMMENTS</u>	<u>CHINESE NAME</u>
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FIGHTERS

<u>F-5/FRESCO</u>	qianjiji-5 (qian-5)
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The Soviet Union began designing the MIG-17 in 1948, and conducted the first test flight in 1949. The aircraft entered the Soviet inventory in 1951, and production ceased in 1958. In October 1954, China ceased test production of the MIG-15BIS in favor of the MIG-17F. The initial contract with China included all of the plans and a majority of the equipment to assemble, then produce the MIG-17. It also included two prototypes and 48 aircraft in different phases of assembly. In April 1955, the first MIG-17F using Soviet parts began assembly in Shenyang, and immediately entered the PLAAF inventory. In April 1956, the first aircraft using Chinese-produced parts was completed. This aircraft was initially named the Type 56 fighter, but was later renamed the F-5. This aircraft conducted its first flight in August 1956. On 17 December 1958, the MIG-17P conducted its first flight, and production was approved in April 1959. Design work on the F-5Jia (F-5A), which began in 1961, was approved in December 1964 and production began immediately. It took an average of 481 days to produce a single aircraft. Production shifted to Chengdu when Shenyang began producing the MIG-19/F-6. The F-5 is no longer in production.

*Please note that the spoken version of the character for fighter (Qian) is used here instead of the written form (Jian, STC 3005).

F-6/FARMER

qianjiji-6 (qian-6)

Soviet development of the MIG-19 began in 1951, test flights were completed in 1954, and the Soviet Air Force received its first aircraft in 1955. In September 1957, the Soviets agreed to transfer production rights for the MIG-19, TU-16, and four tactical missiles to China. In April 1959, Shenyang copied the MIG-19P, but did not formally produce any aircraft. Based on PLAAF requirements, production shifted to copying the MIG-19C, with the first one finishing production in December 1963. The aircraft immediately began entering the PLAAF inventory. In December 1963, the F-6 design was approved and series production began. The PLAAF ceased procuring more F-6s in the 1970s. The F-6 included several variants: the qianzhen-6 recce variant, whose production began when the design was approved in December 1976, entered the inventory in 1971; the qianjiao-6 (FT-6) trainer variant, whose design was approved in December 1973, conducted its first flight in November 1970 and entered the inventory in 1976; the F-6-3 conducted its first flight in August 1969, but this aircraft was produced without any quality control and caused numerous accidents over a four year period, which led to several hundred being recalled for a complete overhaul; and an all weather (quan tianhou ji) variant called the F-6Jia (jia/STC 3946 equates to "A"). This aircraft conducted its first flight in December 1975, had its design finalized and entered production in January 1977, and immediately entered the PLAAF inventory. In October 1977, the decision was made to replace the F-6 with the F-7. Although the F-6 is no longer in production at Shenyang, it was being produced at a high of 50 aircraft per month at one time.

F-7/FISHBED

qianjiji-7 (qian-7)

The Soviets began designing the MIG-21 in 1953, conducted the first test flight in 1955, and began equipping the Air Force in 1958. Based on a 1961 agreement, the Soviets were to provide the rights to China to produce the MIG-21F-13. Between 1961-1963, the Soviets provided technical material, as well as aircraft and engine assembly kits. However, because of the political strains between the two countries, the Soviets did not provide all of the necessary technical material or parts. As a result, China decided to reverse engineer the aircraft and design its own aircraft as the F-7. Prototype F-7 production began in Shenyang in 1964, and strength testing was completed in November 1965. Current Deputy Chief of Staff, Maj Gen Ge Wenyong, conducted the first flight at Shenyang on 17 January 1966. In June 1967, the F-7 design was approved and production began. Overall, the production development phase lasted 28 months (1964-1967), which was one year longer than planned. The decision was made in 1964 to produce the F-7 at Chengdu and the recently completed Guizhou Aircraft Production Base, and to have Shenyang provide technical support. At various times, development was conducted on the F-7-1, F-7-2, F-7-3, F-7-A, F-7-B, F-7-M, and FT-7. No information is available on the F-7-A and F-7-B.

F-7-2

In 1975, Chengdu began work on modifying the F-7-1 as the F-7-2. In September 1979, the F-7-2 design was approved and entered production. The Guizhou Aircraft Corporation was responsible for the interior wing fuel tanks.

F-7-3

In 1981, development began at the Chengdu Aircraft Design Research Institute, the Chengdu Aircraft Corporation, and the Guizhou Aircraft Corporation on the F-7-3. The Guizhou Aircraft Corporation was responsible for producing the wings and main landing gear. In April 1984, the F-7-3 conducted its first flight. The F-7-3 was scheduled to enter series production in 1989.

F-7M

Basic export model.

F-7MP/F-7P

Export model modified for Pakistan.

F-7MB

Export model modified for Bangladesh

F-8/FINBACK qianjiji-8 (qian-8)

(See Appendix D)

F-9 qianjiji-9 (qian-9)

Development of the canard-configured F-9 began at the Ministry of Aviation's 611 Research Institute in Chengdu in 1970. As alterations in the performance targets occurred, the F-9 underwent three different design projects. Almost 16,000 wind tunnel tests were conducted and the prototype design was completed. However, the project was canceled in 1979.

F-10

Unknown

F-11

qianjiji-11 (qian-11)

Fighter/Trainer developed at Shenyang in 1970s. No aircraft produced.

F-12

qianjiji-12 (qian-12)

Developed at Nanchang in 1970s. Six aircraft produced but not deployed. First flight at Nanchang 26 December 1970. Two of the aircraft are on display at the Aviation Museum near Shahezhen Airfield, located just north of Beijing.

F-13

qianjiji-13 (qian-13)

Aircraft developed in 1970s at Shenyang to compete with the F-9. No production aircraft produced.

New fighter

xinjian

Swept-wing aircraft under development at an unidentified location. Wing settings of 25, 45, 68, degrees. Smaller than MIG-23.

Sabre-II

peidao er

A proposed joint F-7 modification project at Chengdu with Pakistan and U.S. in the late 1980s.

Super-7

chaoqian-7

Follow-up to Sabre-II.

GROUND ATTACK

A-5/FANTAN

qiangjiji-5 (qiang-5)

Initial design work on the A-5 began in 1958, during the Great Leap Forward. Following many setbacks, the first flight was conducted at Nanchang on 4 June 1965. At various times, A-5 modifications have included the A-5-1, A-5-1A and A-5-3. In 1970, Nanchang completed several A-5s equipped to drop nuclear weapons, and 7 January 1972, an A-5 dropped a nuclear weapon. This aircraft is on display at the Aviation Museum next to Beijing Shahezhen airfield. Development of a longer range A-5, the A-5-1, began in 1976, and the first flight was conducted in 1980. The A-5-1 design was finally approved on 31 December 1983. The A-5-1A had four further modifications to the A-5-1, and had its design approved in January 1985. The A-5-3 has 32 changes to the A-5-1. The basic A-5-3 contract was signed in April 1981, and the technical evaluation was completed in January 1983. Three prototypes were produced, and a total of 130 sorties and 102 hours were flown.

A-5K

qiangjiji-5 (K = kongjun/Air Force)

Two PLAAF A-5-2s being modified with French CSF Thomson laser rangefinder/avionics for the PLAAF at Hangzhou Jianqiao airfield.

A-5M

Basic export model. New modification with Aeritalia radar rangefinder and avionics. First aircraft crashed in October 1988.

TRAINERS

FT-5

qianji jiaolianji-5 (qianjiao-5)

The decision to produce the FT-5, which is a trainer variant of the F-5, was approved in January 1965. In December 1966, the FT-5's design was approved and production began. The aircraft is still in production at Chengdu.

FT-7

qianji jiaolianji-7 (qianjiao-7)

The FT-7 is based on the Guizhou Aircraft Corporation's work on the F-7-2. The theoretical evaluation began in 1979, and met the tactical and technical requirements in 1981. The design drawings were completed in 1983, and development production began. Strength testing was completed in June 1985, and the first test flight was on 5 July 1985. The aircraft is produced at Anshun, Guizhou Province.

L-8/K-8 Trainer chuji penqi jiaolianji-8

Trainer under development with Pakistan at Nanchang. The Chinese designator L-8 (Lian-8) means trainer. The Pakistani designator K-8 stands for the Karakoram Mountain range which lies between Pakistan and China.

BOMBERS

B-5/BEAGLE

hongzhaji-5 (hong-5)

The Soviets first flew the IL-28 in 1947, and began equipping the Air Force in 1950. In 1963, the Harbin Aircraft Corporation began developing the B-5, based on repair drawings of the IL-28. The first aircraft was completed in 1966, and the first flight took place on 25 September 1966. Series production began in April 1967. The B-5 is no longer in production, but a total of 424 were produced at Harbin.

B-6/BADGER

hongzhaji-6 (hong-6)

The Soviets began development of the TU-16 in 1950, conducted the first flight in 1952, and began equipping its forces in 1955. In 1956, the Soviets and Chinese signed a contract to build a medium bomber factory at Xian, and in September 1957, the Soviets gave China the rights to produce the TU-16. In February 1959, the Soviets turned over the plans for the TU-16, as well as two aircraft and one unassembled aircraft to Harbin, where the first flight took place in September 1959. The Xian production facility was completed in 1961, and the TU-16 production capability was transferred there from Harbin between 1962-1964. Strength tests of the first indigenously-produced B-6 were completed in October 1966, and the first test flight took place on 24 December 1968. The B-6 entered series production in 1969. Development of the B-6D (B-6 ding, STC 0002) began in 1975, and the first flight took place on 29 August 1981. On 6 December 1981, it conducted telemetered bomb tests at a bomb range, and conducted live testing at the end of 1983.

B-7/FB-7hongzhaji-7/qianjiji hongzhaji-7
(hong-7/qianhong-7)

Fixed wing fighter-bomber under development at Xian Yanliang for the PLA Navy.

SH-5

shuihong-5

Four turboprop engine bomber amphibian produced at Harbin. In service with PLA Navy.

TRANSPORTS

Y-5/COLT

yunshuji-5 (yun-5)

In March 1958, the design for the Y-5, which is a reverse-engineered AN-2, was approved and series production began. A total of 949 were produced at Shijiazhuang from 1958 until production ceased in 1986.

Y-5B

yunshuji-5B (yun-5B)

Under development at Shijiazhuang aircraft factory. Production was scheduled to begin in 1989.

Y-6

yunshuji-6 (yun-6)

24-32 seat transport developed but not produced in 1960s at Nanchang.

Y-7/COKE

yunshuji-7 (yun-7)

Short range, twin turboprop, 52 passenger. Reverse engineered AN-24 in series production at Xian. First test flight on 25 December 1970.

Y-8/CUB

yunshuji-8 (yun-8)

Y-8 development began in 1969. In December 1974, the Y-8 conducted its first flight at the Xian Aircraft Factory. In December 1975, the Y-8 conducted its first flight at the Shaanxi Aircraft Factory in Hanzhong, Sichuan Province. In February 1980, the Y-8 design was finalized and production began. In May 1984, the Y-8 conducted its first flight from Chengdu to Lhasa. The Y-8 is a medium range, four turboprop, passenger or cargo, which is a reverse engineered AN-12.

Y-9

yunshuji-9 (yun-9)

Large, military transport developed in late 1960s but not produced.

Y-10

yunshuji-10 (yun-10)

B707 look-alike at Shanghai. First flight on 26 September 1980. Project abandoned.

Y-11

yunshuji-11 (yun-11)

In July 1977, the Y-11 design was approved and production began at Harbin. It is a short range, twin turbo-prop, for 17 passengers.

Y-12

yunshuji-12 (yun-12)

Follow-on to Y-11. In December 1984, the yun-12-1 evaluation was completed. In series production at Harbin.

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HELICOPTERS

Z-5/HOUND

zhishengji-5 (zhi-5)

In December 1958, the Z-5, which is a reverse-engineered MI-4, conducted its first flight at Harbin. In December 1959, the Z-5 entered production.

Z-6

zhishengji-6 (zhi-6)

The Z-6 was a reverse engineered MI-8, which was developed between 1966-1979. It conducted its first flight 1969, and its design was approved in January 1977. However, the project was abandoned.

Z-7

zhishengji-7 (zhi-7)

Medium helicopter developed in 1960s. None produced.

Z-8

zhishengji-8 (zhi-8)

The Changhe Aircraft Factory, AKA Jiangxi Aircraft Factory and the China Helicopter Design Research Institute/602 Institute (zhongguo zhishengji sheji yanjiusuo) developed the Z-8 helicopter, which is based on the French SA-321 Super Frelon. Z-8 number 01 conducted its first test flight in December 1984. Z-8 number 02 flew its first flight at the end of 1985, and adjustment flights had been completed in December 1986. Riveting on Z-8 number 03 was completed in June 1986, and Z-8 number 04 was being riveted in 1987. The Z-8 has three engines, each with 1,500 horsepower. It can carry 3,000 kilograms of cargo or can carry 5,000 kilograms suspended below the fuselage. It can also carry one Beijing-212 jeep and necessary personnel, such as 27 fully armed troops or 39 passengers; can carry 15 stretchers for wounded/sick personnel and one medical person; can suspend 5,000 kilograms of cargo; and can be used for maritime search, antisubmarine warfare, and mine deployment. With modifications, it can also be used during forest fires, maritime surveillance, geologic survey, and construction missions. It is 23 meters long; 6.6 meters high (fuselage); 5.2 Meters wide; rotor diameter is 18.9 Meters; empty weight is 6,980 kilograms; maximum takeoff weight is 13,000 kilograms; maximum speed is 270 km/hr; surveillance speed (xunhang sudu) is 232 km/hr; range is 800 to 1,100 km; maximum continuous flight time is 4.4 Hours; and operating ceiling is 3,050 meters.

Z-9

zhishengji-9 (zhi-9)

In October 1980, China and France signed a contract for SA-365 Dauphin production at Harbin.

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APPENDIX D

F-8 HISTORY

In 1964, the Shenyang Aircraft Corporation's (SAC/Shenyang feiji zhizao gongsi/Shenfei) R&D center (the 601st institute) began a development program to design, manufacture, and test fly a new fighter. This was the F-8, whose baseline was the MIG-21.* At that time, the R&D center's engineers (about 600 people) had studied and analyzed the F-7 for three years, and SAC had completed F-7 pre-production and flight testing. Because SAC lacked new fighter development experience, they planned to manufacture only two F-8 prototype aircraft -- one for flight tests and one for static tests. F-8 prototype number one's first flight was in June 1969.

F-8 validation was completed in December 1979 -- 15 years after development began. The program continued through all of this because the government's investment in the program was high and China wanted to encourage the construction of the aeronautics industry, including the infrastructure for R&D, manufacturing, and flight testing.

There are two variants of the basic F-8 -- a day fighter and an all-weather fighter. Some F-8s are also modified as reconnaissance aircraft. Reasons why the F-8 flight test evaluation phase lasted for a long time are listed below:

- There was only one aircraft available for flight test for many years.
- There were many design problems during flight tests.
- The plan of the program changed frequently.
- The support equipment for the aircraft had not been developed.
- The most important influence was the Cultural Revolution.

F-8-2 REQUIREMENTS

In 1980, the PLAAF established its modification requirements for the F-8, based on tactical and technical considerations. SAC incorporated these requirements into the F-8-2. Emphasis was put into the following three areas:

- Change the nose intake into side inlets to allow for a larger radar antenna, resulting in an increased search and track capability

* The written Chinese designator for the F-8 is Jian-8 or J-8. However, the spoken version is Qian-8.

- Exchange the engine for a more powerful one
- Upgrade the avionics (to include ECCM, a fire control system, an automatic flight control system, etc.) to enhance combat efficiency
- Increased maintainability

From 1985 to May 1990, the Chinese F-8-2 development project actually consisted of two programs. One program was the integration of an American fire control system acquired through the "Peace Pearl" program. The second program involved the installation of a Chinese fire control system. Peace Pearl, which was a \$502 million project funded solely by the PLAAF through a United States foreign military sales (FMS) program, originally called for selling a fire control package to modernize 50 basic F-8-2 aircraft with a modified Westinghouse AN/APG 66 radar and fire control computer, a Litton LN-39 inertial navigation system and a head-up display. The program, which did not include any technology transfer, also included five spares.

SAC's R&D center finished the basic F-8-2 design in 1983, and SAC finished the manufacturing preparations simultaneously. The primary structural modification took place in the front section of the fuselage. Based on SAC's experience with the F-8, they manufactured five prototype aircraft this time.

F-8-2 prototype 0001's first flight was on 12 June 1984 (it uses bort number 840612). Design finalization flight testing was completed on 14 October 1987, and the PLAAF flew its first test flight at Yanliang in November. The F-8-2 incorporated 157 new or modified pieces of F-8 hardware/equipment to the F-8. This amounted to about one-third of all the equipment on the F-8. During the development process, 94 primary experiments were performed.

MODIFICATIONS

In conjunction with various Ministry of Aero-Space Industry (MAS) research institutes, SAC has made several modifications to the basic F-8 fighter and to the F-8-2 still under development. Some of these modifications include the WP-13 engine, FDSX-02 and FDSX-03 electronic anti-skid brake system, KJ-12 autopilot, use of titanium alloy, new radome, FR225, and FDJ04A. The F-8-2 completed design finalization on 14 October 1987 and the PLAAF flew the aircraft for the first time at the Yanliang flight test center in November 1987. A January 1989 conference was held in Xian to evaluate F-8 fatigue testing, which should increase the service life of the F-8 by three times. The following paragraphs provide specific information on these topics.

The wopen-13A11 (WP-13A11) engine completed national evaluation test flights for the design finalization at the Yanliang flight center by 24 September 1987. An F-8-2 flew over 100 sorties to test ten plus items.

The MAS 609 institute developed the FDSX-02 and FDSX-03 electronic anti-skid brake system (dianzi fanghua shache xitong) and completed over 20 ground taxi tests in an F-8 at SAC on 21 August 1987. Tests were conducted on an extremely wet and on a dry runway. During the final two tests on a dry surface without deploying the drag chute at a speed of 287 km/hr, the braking distance was 30 percent less than with the mechanical (jixie) anti-skid brake system. The tests showed that by using the new system, the F-8 can use 900-1000 meters of runway to stop without using its drag chute, or 600-700 meters with drag chute at a speed of 287 km/hr.

SAC has incorporated into the F-8 64 secondary load bearing component frames (ci chengli goujian 64 kuang) using TC4 titanium alloy superplasticity/ diffusion bonding technology for the first time. This technology was developed by the MAS's Beijing Aeronautical Manufacturing Technology Research Institute/BAMTRI (Beijing hangkong gongyi yanjiusuo/301 suo) and supported by the 601 institute under SAC contract. Using this titanium alloy has decreased the amount of spare parts by 12 percent, reduced the structural weight by 8.8 Percent, and the patterns/molds (muju) by about 50 percent. Development of the 64 frames was completed in November 1986 and installed in an F-8 by the end of 1986. From then until 9 September 1987, the F-8 was tested at mach 2.2, At 20,000 meters, at a special large indicated air speed (teji da biaosu) of 1200 km/hr, and radar formation (leida biandui). These tests covered nine sorties and almost seven flying hours.

DESIGN FINALIZATION

The F-8-2 completed design finalization test flights on 14 October 1987. In November 1987, a PLAAF pilot from the PLAAF's test flight and training center (shifei xunlian zhongxin) at Cangzhou and a deputy regimental commander completed the first PLAAF test and verification flights for the F-8-2 at the Yanliang test flight center. They flew five sorties, covering two hours and 50 minutes, without any malfunctions. The tests included the use of KJ-12 autopilot (zidong jiashiyi) and reduced power horizontal tail (cha li pingwei). Tests were conducted at medium-low altitude for a full set of special (teji), cloud piercing (chuanyun), and instrument route flying (yibiao hangxian feixing).

*On 30 November 1987, the WP-13 passed design finalization technical evaluation at the Liyang Machinery Company. The next step was to seek approval from the State Council and Central Military Commission's Military Industry Products Finalization Commission (jungong chanpin dingxing weiyuanhui). The WP-13 began in 1978 as a joint venture between the Liyang Machinery Company and the Chengdu Engine Company. Everything was ready to begin small batch production requirements.

On 12 December 1987, the F-8-2 radome, which was designed and produced by the MAS's Jinan Composite Material Component Factory (fuhe cailiao goujian chang), passed design finalization and achieved examination and approval. This ends China's long history of copying other countries' radomes.

On 31 November 1987, MAS's 609 institute held a product design finalization conference for seven F-8-2 products. The Design Finalization Commission approved design finalization for four FR225 products, and reported three FDJ04 products to the Aviation Products Design Finalization Commission (hangkong chanpin sheji dingxing weiyuanhui) to approve design finalization. At that time, the 609 institute had already completed scheduling for design finalization for its full complement of 12 products.

Between 1986 and 1987, the China Research Institute of Aero-Accessories/CRIAA (hangkong fujian yanjiusuo) in Xiangfan, Hubei province, developed 21 items for the F-8-2, F-8 all weather (quan tianhou) fighter, and SH-5, all of which passed design finalization.

By 8 September 1988, the Beijing MRAF's factory representative office at MAS's Qingyun Instruments Factory (Qingyun yiqi chang) developed automatic test instrument(s) for the KJ-12 autopilot. This test equipment then passed the PLAAF Aero-Engineering Department's technical evaluation (jishu jianding). The equipment can automatically test the KJ-12's fifteen signal channels (xinhao tongdao) and six functions (6 xiang gongneng) within 2 minutes and 50 seconds.

MAS held an F-8 fighter full aircraft fatigue test evaluation (Jian 8 quanji pilao shiyan jianding) conference in Xian from 6-9 January 89, and over 30 people participated. MAS's 601 and 629 institutes were the primary organizations responsible for the tests. Technical preparations began in 1981, followed at various times by testing and program theoretical evaluation (shiyan fangan lunzheng), software tests (shiyan ruanjian), hardware development (yingjian de yanzhi), loading spectrum (zaihepu) evaluation, and installation debugging tests (anzhuang tiaoshi shiyan). In October 1988, fatigue testing was completed for tripling the design life (sanbei sheji shoumingqi de pilao shiyan), and achieved the predicted results. SAC has already achieved the ability to make design and technical modifications to weak points discovered during fatigue testing, in order to increase the F-8-2 service life before production begins.

Following the June 1989 events in Tiananmen Square, the United States suspended arms sales to China. Chinese technicians were allowed to resume work on the program a few months later. Although Beijing decided in May 1990 not to proceed beyond the development stage with the Peace Pearl program, China did continue with its domestic version. PLAAF and PLA naval aviation maintenance personnel conducted three month's training on the F-8-2 at SAC from April to June 1990. The visit of CCP General Secretary Jiang Zemin to the F-8-2 production facility in late October 1990 virtually confirmed that the aircraft is destined to become part of the Navy and Air Force inventories in the near future.

APPENDIX E

HISTORY OF THE PLAAF SECOND AVIATION SCHOOL 1949-1981

In March 1946, the PLA established its first aviation school, called the Northeast Old Aviation School (dongbei lao hangxiao), with its headquarters in Mudanjiang, Jilin Province. The school had several airfields located throughout the northeast. When the PLAAF was established on 11 November 1949, the aviation school was immediately split into two bomber schools and four pursuit (quzhu) schools. The 2nd Bomber School (dier hongza xuexiao) was formally established in Changchun, Jilin province, on 1 December and changed its name to the 2nd Aviation School (dier hangkong xuexiao) on 20 December (its cover designator was the Zhujiang unit). It was directly subordinate to HqAF, and had three squadrons (zhongdui). In June 1976, the school changed its name to the PLAAF 2nd Aviation School.

From 1949-1958, the school trained the entire bomber aircrew, including pilots, navigators, communicators, and gunners. In December 1958, all of the navigation, communications, and gunnery cadets were transferred to form the new 16th Aviation School, and the 2nd Aviation School became responsible solely for training bomber and helicopter pilots (some bomber graduates also went to transport units).

Between 1966 and 1969, the school gradually relocated to Sichuan province. Altogether, the school used 13 airfields. In the northeast, Dafangshen, Kuanchengzi, Datun, and Shuangcheng were permanent bases, while Datushan and Siping were used as temporary airfields. In Sichuan, Pengshan, Jiajiang, Huzhou, Yibin, and Qionglai were permanent bases, while Taipingsi and Xinjin were only used temporarily.

FOUR DEVELOPMENT PHASES

From 1 December 1949 through 31 December 1981, the school had four distinct development phases, and graduated a total of 2,418 pilots, 735 navigators, 653 communicators, and 551 gunners. The orders for each major change in organization were issued by the CCP Central Committee Military Commission (junwei), Ministry of National Defense (guofangbu), Headquarters Air Force (HqAF/kongjun), Military Region Air Force (MRAF) Headquarters (junqu kongjun), Air Corps (jun/kongjun jun), Command Posts (zhihuisuo), or the school.

Phase one (1949-1953) consisted of building the school on the basis of the Army's 138th division. From September 1949 until July 1951, the Soviet Union had 222 advisors at the school. When the Soviet advisors departed, the Chinese took over complete responsibility for training.

During phase two (1954-1965), aviation training changed from an accelerated course to a 2-3 year training period. Aviation theory increasingly became an important part of the

curriculum. From 1956-1960, the instructors conducted night navigation and 5-ship and 9-ship formation training in basic trainers, as well as TU-2 bomber 3-ship takeoffs, 2-ship landings, 9-ship formation flights, and instrument flights.

During phase three (1966-1976), the school gradually moved between March 1966 and January 1969 to Sichuan province, and occupied five airfields (Pengshan, Jiajiang, Huzhou, Yibin, and Xinjin). During the Cultural Revolution, no theory courses were taught from 1967 through June 1970, which resulted in an increase of aircraft accidents at the school and at operational bases. When Defense Minister Lin Biao "blew himself up" (ziwo baozha) on 13 September 1971, all flying activity ceased for three months.

Highlights of phase four (1977-1981) included the first CJ-6 solo flights in clouds and the first B-5 training. In 1981, the school also trained 24 B-5 navigators for the first time since 1958. Instructors for the First Regiment (CJ-6) reached mission levels of 200 meters and one kilometer visibility, while the instructors in the Second and Third Regiments (B-5) reached levels of 300 meters and two kilometers visibility. Some of the individual highlights are as follows:

- Total of 2418 pilots graduated (1364 in Sichuan)
- Total flight hours 575,431 (366,253 in Sichuan)
- Total flying periods 18,254 (11,171 in Sichuan)
- Two female aircrew classes included 44 pilots, 17 navigators, and 6 communicators
- The school ceased operations for three months following Lin Biao's crash (13 September 1971)
- For 18 months in 1975-1977, three groups of helicopter and support personnel went to the Congo and Guinea to train people
- From March-May 1981, a squadron from the 5th Reconnaissance Regiment conducted reconnaissance missions along the Sino-Vietnamese border in Yunnan province
 - In 1981, the school had 334 vehicles assigned
 - In 1981, there were 204 flight instructors
 - From 1972-1981, each instructor averaged 54 flying hours
 - Weather minimums for the cadets was 2-3 kilometers visibility for trainer aircraft, and 3-4 kilometers for B-5s

- The school trained 20 North Korean armament personnel at an unspecified time
- During the Cultural Revolution, the school sent 1669 people to 11 provinces and 68 work units (danwei) for "san zhi liang jun" (three supports and two militaries -- support industry, agriculture, and broad masses of the left, as well as military control and political and military training)
- In 1981, the CJ-6 regiment could complete studies for 130-140 cadets and could supply enough cadets for the two B-5 training regiments
- From the beginning to December 1981, the school had 125 accidents, including 57 due to pilot control mistakes, 20 due to circumventing flight discipline, 17 due to improper ground control, 27 due to maintenance, and four others
- February-April 1979, the 8th Air Division helped the school conduct its first B-5 night training. In 1981, the school conducted eight night training periods

COMMAND STAFF

The command staff consisted primarily of the following people:

- Commandant
- Political commissar
- Deputy Commandant(s)
- Deputy Political Commissar(s)
- Chief of Staff (Director, Headquarters Department)
- Director, Political Department

The Party Committee's Standing Committee (dangwei changwei), which averaged 5-7 members since 1949, consists of the commandant, political commissar, deputy commandant(s), and deputy political commissar(s). The Party Committee (dangwei), which averaged 10-15 members, consists of the Standing Committee plus the other key members of the school. The political commissar is the secretary (shuji) and the commandant is the deputy secretary (fushuji). For example, sixth Party Committee (February 1979 to February 1981) consisted of 20 members, and the Standing Committee consisted of six members. Around 1979 the Inspection Commission (jiancha weiyuanhui/jianwei) changed to the Discipline Inspection Commission (jilu weiyuanhui/jiwei). This commission, which also has a secretary and deputy secretary, consisted of seven members in 1981.

ADMINISTRATIVE STRUCTURE

In December 1949, the school's administrative organization consisted of the following six first level departments and divisions:

- Headquarters Department (siling bu)
- Political Department (zhengzhi bu)
- Training Division (xunlian chu)
- Aircraft Maintenance Division (jiwu chu)
- Supply Division (gongying chu)
- Health Office (weishengsuo)

At the end of 1950, there were only four first level administrative departments and divisions as follows:

- Headquarters Department (siling bu)
 - Training Division (xunlian chu)
 - Aircraft Maintenance Division (jiwu chu)
 - Air Traffic Control Office (hangxing ke)
 - Communications Office (tongxin ke)
 - Military Affairs Office (junwu ke)
 - Administrative Office (guanli ke)
 - Confidential Branch (jiyao gu)
 - Directly Subordinate Security Battalion (zhishu jingwei ying)
- Political Department (zhengzhi bu)
 - Organization Office (zuzhi ke)
 - Security Office (baowei ke)
 - Propaganda Office (xuanchuan ke)
 - Cultural Office (wenhua ke)
 - Youth Office (qingnian ke)
- Supply Division (gongying chu)
 - Finance Office (caiwu ke)
 - Quartermaster Office (junxu ke)
 - Materiel Office (caiwu ke)
 - Barracks Construction Management Office (yingfang xiujian guanli ke)
 - Field Station Office (changzhan ke)
 - Mess Hall Management Office (shitang guanli ke)
 - Transportation Unit (yunshu dui)

-Health Division (weisheng chu)

- Prevention Office (fangwei ke)
- Hospital Administration Office (yizheng ke)
- Sanitorium (xiuyangsu)
- Clinic (menzhensuo)
- Epidemic Prevention Clinic (fangyisuo)

By the end of 1981, the organization had been reduced to three first level administrative departments and divisions as follows:

- Headquarters Department (siling bu)

- Flying Training Division (feixing xunlian chu)
- Theory Training Division (lilun xunlian chu)
- Aircraft Maintenance Division (jiwu chu)
- Communications Office (tongxin ke)
- Ground Training Office (dimian xunlian ke)
- Military Affairs Office (junwu ke)
- Air Traffic Control Office (hangxing ke)
- Confidential Office (jiyao ke)
- Directly Subordinate Political Office (zhizheng ke)
- Administrative Office (guanli ke)

- Political Department (zhengzhi bu)

- Secretariat Office (mishu ke)
- Organization Office (zuzhi ke)
- Cadre/Personnel Office (ganbu ke)
- Security Office (baowei ke)
- Cultural Office (wenhua ke)
- Propaganda Office (xuanchuan ke)
- Political Education and Research Office (zhengzhi jiaoyanshi)

- Logistics Department (houqin bu)

- Finance Office (caiwu ke)
- Quartermaster Office (junxu ke)
- Air Materiel and Armament Office (hangcai junxie ke)
- Fuel and Transportation Office (youliaoyunshu ke)
- Airfield and Barracks Office (jichang yingfang ke)
- Health Office (weisheng ke)

CADET ORGANIZATION CHANGES

From 1949 through 1981, the school's cadet organization changed considerably as follows:

- On 1 December 1949, the school had one cadet battalion (xueyuan ying) composed of six companies (three aircrew and three ground crew) and 41 aircraft (10 YAK-18, 12 U-TeBo (STC 3527-3676/0130), 17 U-TU-2 and TU-2, 2 YAK-12).
- In April 1950, the cadet battalion expanded to 12 companies and split into two battalions (one aircrew and one ground crew).
- In November 1950, the school received 170 aircrew and ground crew personnel from Taiyuan and the 7th Aviation School to form an Air Transport Training Group (kongyun xunlian dadui). In February 1951, the group was transferred to HqAF.
- From February through May 1951, the two cadet battalions expanded to become four groups (dadui). The First Aircrew (kongqin) Group, the Second and Third Ground Crew (diquin) Groups, and the Fourth Flying (feixing) Group. In June, the Fourth Flying Group expanded into the Fourth, Fifth, and Sixth Flying Groups. All six groups were directly subordinate to the school's commandant.
- In August 1952, the school's two ground crew groups, one security company, and part of the training division's ground crew cadres (1713 total enlisted personnel) were transferred to form the 9th Aviation School. At this time, the school reorganized into five flying groups and one aircrew group.
- In March 1953, the school formed two flying training regiments (feixing xunlian tuan) plus various groups.

TRAINING UNITS

As of December 1981, the 2nd Aviation School had three training squadrons, one cadet group, and one directly subordinate Yun-5 squadron. The First Training Regiment had 76 CJ-6 aircraft, with the First Group at Jiajiang airfield, and the Second and Third Groups at Huzhou airfield. The Second Training Regiment had 16 B-5s and 30 BT-5s at Qionglai airfield, supported by the Qionglai Field Station. The Third Training Regiment had 16 B-5s and 32 BT-5s at Pengshan airfield. The directly subordinate Yun-5 squadron had 3 Yun-5 at Jiajiang airfield. The following paragraphs trace these units from their beginning to the end of 1981.

FIRST TRAINING REGIMENT

- The First Training Regiment (diyi xunlian tuan), as it was organized in 1981, began as the First Training Regiment.
- In September 1966, some of the instructors and administrative personnel from the original First and Second Regiments had already formed a CJ-6-3 regiment. In March 1967, the second aviation school's original First Regiment (CJ-5-1) became subordinate to the Seventh Aviation School. At that time, the CJ-6-3 regiment formally became the 2nd Aviation School's First Training Regiment and conducted transition training at Shuangcheng airfield. Since the 2nd Aviation School had already begun moving to Sichuan, this regiment was administered by the 1st Aviation School during the transition period.
- In January 1969, the First Training Regiment, including 42 aircraft and 14 vehicles, moved in three groups from Shuangcheng airfield to Huzhou airfield in Sichuan. At this time, the regiment became subordinate to the 2nd Aviation School.
- In 1980, the First Training Regiment added one flying group plus maintenance and supply personnel, and was stationed at Jiajiang airfield. The Second Training Regiment's field station became responsible for both regiments at Jiajiang.

SECOND TRAINING REGIMENT

- The 1981 Second Training Regiment (dier xunlian tuan) began as the First Training Regiment in 1953. At that time, the First Training Regiment was formed at Kuanchengzi airfield from the First and Second Flying Groups plus the supply station at Kuanchengzi. The regiment had YAK-18 and U-TeBo aircraft.
- In 1956, Kuanchengzi airfield reverted to Changchun city, where a factory was built. The regiment moved to Datun airfield and flew YAK-18s. The U-TeBo's moved to the TU-2 regiment.
- At the end of 1957, this regiment established the Third Group at Shuangcheng airfield in Heilongjiang Province, in order to train female cadets. When the females graduated on 26 November 1958, the group was abolished.
- On 7 July 1959, the school expanded from two to four regiments. Using the First Regiment's First Group as a basis, the Second Training Regiment was established at Shuangcheng airfield.
- On 20 June 1962, the four regiments were combined into two regiments. The Second Regiment at Shuangcheng became the Third Group and returned to the First Regiment's subordination, but remained at Shuangcheng.

- On 8 September 1963, Shuangcheng airfield was given to the 3rd Aviation School, while the Third Group and the Parachute Group (tiaosan dadui) moved to Siping airfield on 18 September.
- On 15 September 1964, the Third Group again returned to Datun airfield and the group was abolished.
- On 16 August 1966, this regiment was expanded to become a CJ-5-1 regiment
- Between 12 May to 18 June 1967, the school's administrative staff moved to Jiajiang airfield in Sichuan province, and the regiment returned to the 7th Aviation School as that school's First Regiment.
- In April 1969, this regiment returned to the 2nd Aviation School as the Fourth Training Regiment. Between April and 22 July, the regiment's 694 personnel, 59 CJ-5s, and 16 vehicles moved from Datun airfield to Taipingsi airfield next to Chengdu, Sichuan Province.
- In October 1973, one of the regiment's groups moved to Jiajiang airfield to conduct CJ-6 transition training. On 25 April 1974, the entire regiment moved from Taipingsi to Jiajiang.
- From January-June 1976, the Fourth Regiment began transition training to the FT-5.
- In 1976, the Fourth Regiment became the Second Training Regiment. In June 1976, under the guidance of the PLAAF's 8th Air Corps (kong 8 jun) at Chengdu, the regiment's command staff, two flying groups, and the maintenance group (a total of 500 people) moved to Qionglai airfield. Qionglai airfield's field station (changzhan) provided logistics support for the new unit.
- In May 1978, the Second Regiment transitioned to a B-5 training regiment and all of the FT-5s (40 aircraft) were transferred to an unidentified school/unit.

THIRD TRAINING REGIMENT

- The 1981 Third Training Regiment (disan xunlian tuan), which began as the Second Training Regiment in 1953, was formed from the Third and Fourth Flying Groups and field station at Dafangshen airfield. The regiment had TU-2 aircraft.
- When the school expanded from two to four regiments in September 1959, the Second Training Regiment became the Third Training Regiment, and stayed at Dafangshen. In addition, some of the personnel helped form the Fourth Training Regiment at Datushan airfield, flying the TU-2.

- In April 1962, the Fourth Regiment's maintenance group was transferred to form the 25th Air Division at Lintong, near Xian.
- On 22 June 1962, the Fourth Regiment combined again with the Third Training Regiment and became the Second Training Regiment, stationed at Dafangshen with TU-2s.
- In March 1966, the Third Training Regiment and the repair shops moved from Dafangshen to Pengshan airfield in Sichuan. The repair shop moved back to Changchun in March 1967, but returned to Jiajiang airfield in April 1968.
- From 1 August to November 1974, six sets of aircrew members from the Third Regiment converted to the B-5 at the 1st Aviation School.
- In February 1976, the Second Regiment again became the Third Training Regiment and began transitioning to the B-5. In addition, 434 maintenance personnel split into groups and began B-5 transition studies at the Second Technical School (erjixiao), the 10th Air Division (kong 10 shi), and the 20th Air Division (kong 20 shi).

HELICOPTER TRAINING REGIMENT

- The Helicopter Training Regiment (zhishengji xunlian tuan) was established in 1966 as the Third Training Regiment.
- In August 1966, the 9th Mobile Maintenance Group (jidong jiwu dadui) at Jiaxing airfield and parts of the PLAAF Independent Third Regiment were subordinated to the 2nd Aviation School. These were combined with portions of the school's original Second Regiment to form a Helicopter Training Regiment. On 1 September 1966, the Third Training Regiment was formally established at Huzhou airfield and immediately commenced transition training into the Zhi-5 helicopter.
- From January 1967 to December 1969, the regiment was temporarily assigned to Xinjin airfield, along with the civil aviation's 14th Aviation School's First Training Regiment, while Yibin airfield was being repaired. In January 1970, the regiment formally moved to Yibin airfield.
- In 1976, the Helicopter Training Regiment was abolished. The First Flying Group, 14 Zhi-5s, plus associated maintenance elements were transferred to the 6th Aviation School. The Second Flying Group (less the Fourth Squadron), 23 Zhi-5s, and associated maintenance elements were transferred to the Lanzhou MRAF Headquarters. The Second Flying Group's Fourth Squadron, Six Zhi-5s, plus associated maintenance elements transferred to the Chengdu MRAF Command Post's (Chengdu junqu kongjun zhihuisuo/Chengzhi) Ninth Transport Group (yunshu 9 dadui). Four Zhi-5s were transferred to the Kunming MRAF Command Post's Seventh Transport Group.

- Based on an 8th Air Corps directive, the school's Yibin airfield was transferred to the Chengdu MRAF's 9th Transport Group in April 1978.

FIFTH FLYING GROUP

- The Fifth Flying Group (diwu feixing dadui), which was established in 1951, became an Independent Group (duli dadui) in April 1954. The TU-2 squadron (8 aircraft) was at Dafangshen airfield and the LI-2 squadron (4 aircraft) was at Kuanchengzi airfield, both of which were directly subordinate to the school.
- In October 1958, about 250 personnel from the Independent Group were transferred to form the 16th Aviation School. In December 1958, various instructors, plus all the navigation, communication, and gunnery cadets also moved to the 16th Aviation School. From this time on, the second aviation school was only for pilot training.

PARACHUTE GROUP

- In July 1959, the 2nd Aviation School established a Parachute Group (tiaosan dadui). The group temporarily used Dafangshen airfield and borrowed Changchun City's Erdaohezi airfield. In June 1961, one flying squadron and three AN-2s transferred to the 6th Aviation School to form a Parachute Group.
- In August 1962, the Second School's Parachute Group moved to Shuangcheng airfield and trained with the First Regiment's Third Group. In September 1963, they all moved to Siping airfield. In August 1965, Shuangcheng airfield returned to the 2nd Aviation School, and the parachute group moved back to Shuangcheng.
- In January 1969, the Parachute Group moved from Shuangcheng to Jiajiang in Sichuan under the Second School. In January 1970, the group was abolished. Two aircraft remained at the school and the remaining aircraft returned to the Shenyang MRAF hq.

DIRECTLY SUBORDINATE YUN-5 SQUADRON

- In April 1971, the school established a Directly Subordinate Yun-5 Squadron (zhishu yun-5 zhongdui) at Jiajiang airfield. The squadron was subordinate to the school's leaders. In 1976, the squadron was re-subordinated to the school's Headquarters Department.

FLYING CURRICULUM

A HqAF directive in February 1981 set the following flying curriculum at the school:

- 160 Hours in the CJ-6, which includes 342 accompanied times (cishu, STC 2945/2422) (106 hours) and 297 solo times (54 hours). This consists of daytime takeoffs, landings, and flight route (zhoujian chiluo hangxian); special flights (teji); blackened cockpit (ancang); instrument flights (yibiao); navigation (hangxing); formation flight (biandui); and night flying (yehang) or inclement weather (zhoufu). These are taught in six courses and 28 exercises.
- 100 Hours in the B-5, which includes 220 accompanied times (66.54 Hours) and 140 solo times (32.06 Hours). This consists of daytime takeoffs, landings, and flight route; darkened cockpit and instrument (ancang yibiao); formation flights; navigation and bombing (hangxing hongzha); night flights or inclement weather. These are taught in five courses and 32 exercises.

An example of training for the 35th training period (1 July 1980 to 21 November 1981) follows:

- Theory training began on 1 July 1980 and concluded on 16 October 1980, for a total of 633 hours.
- CJ-6 training began on 27 October 1980 and concluded on 31 May 1981, for a total of 156.24 Hours.
- BT-5/B-5 training began on 30 May 1981 and concluded on 21 November 1981, for a total of 55 hours.
- Each cadet flew on 118 days for a total of 211.24 flying hours.
- Of the 63 cadets that began training, 32 cadets graduated. Of these, 9 were sent to the 13th Air Division and 12 to the 36th Air Division, while 8 remained at the school as CJ-6 instructors and 3 remained as BT-5 instructors. Of the 31 cadet washouts, 24 were due to physical problems and 7 were due to techniques during the BT-5/B-5 training period.

NAVIGATION, COMMUNICATIONS, AND GUNNERY ASSIGNMENTS

As mentioned earlier, in 1958 the school ceased training navigators, communicators, and gunners (the 16th Aviation School was established to perform this function). Prior to

1958, these non-pilot graduates were sent to the following operational units upon graduation. In addition, several graduates were sent to CAAC.

- Navigation: Primarily to the 8th, 13th, and 20th Air Divisions and the 3rd, 4th, and 5th Independent Regiments, but also a few early on to the 10th, 11th, 16th, 17th, 18th, 19th, 23rd, and 25th Air Divisions.

- Communications: Primarily to the 8th, 10th, 13th, 20th, and 25th Air Divisions and to the 3rd Independent Regiment, but also some to the 11th, 23rd, and 28th Air Divisions and the Aerial Survey Regiment (1957).

- Gunnery: Primarily to the 8th, 10th, 20th, 22nd, 23rd, 25th, and 28th Air Divisions and the 4th and 5th Independent Regiments, but a few to the 11th and 13th Air Divisions.

PILOT ASSIGNMENTS

Pilot assignments upon graduation (1949-1981) are as follows (several pilots remained as instructors, were assigned to various headquarters, or were transferred to other aviation schools):

- TU-2 Bomber: Primarily to the 8th (first 19 in 1950), 10th (first 28 in 1950), 13th (first 17 in 1951), 20th (first 30 in 1951), 23rd (first 4 in 1951), 25th (first 29 in 1951), 34th (first 8 in 1953), 36th (first 6 in 1964), 48th (first 10 in 1970), and 50th (10 in 1974) Air Divisions, the 3rd, 4th, and 5th Independent Regiments, the Aerial Survey Regiment, and to CAAC. The last TU-2 cadets graduated in 1976. In addition, 11 TU-2 pilots who graduated in 1958 were sent to Vietnam (11 Vietnamese pilots were trained in the YAK-18 from 1956-1958, along with six navigators and five communicators. Another 34 pilots studied from 1961-1963. The pilots flew only the YAK-18, and none flew the TU-2).

- Zhi-5 Helicopter: (first class graduated in 1967, and the last class graduated in 1972): Primarily assigned to the 1st through 11th Independent Groups, the 3rd, 6th, and 9th Independent Regiments, the 34th and 43rd Air Divisions, and the Guangzhou MRAF Headquarters Independent 6th Group.

- B-5 Bomber: (first class graduated in 1977): Graduates have gone primarily to the 8th (first 9 in 1978), 10th (first 12 in 1977), 13th (first 4 in 1979), 20th (first 9 in 1978), 23rd (first 10 in 1979), 25th (first 10 in 1980), 36th (first 12 in 1980), and 48th (first 20 in 1979) Air Divisions, as well as to the Aerial Survey Regiment.

APPENDIX F

CHINESE DEFENSE REFORM: THE AIR FORCE AS A CASE STUDY*

Richard J. Latham
Kenneth W. Allen

Defense reform was one of many issues on the agenda of Chinese reformers during the 1980s. Although national security reforms had important policy implications for the Chinese government, they never seemed to possess the urgency that economic and political reforms did. Among Western analysts, the term Chinese defense modernization frequently has been used interchangeably with defense reform. This practice, in turn, has led to glossing over important changes in China's military. Additionally, a preoccupation with technical information about weaponry has caused analysts to miss the recent emergence of substantive information about the composition of and dynamics within China's defense establishment.

In this study we use the People's Liberation Army (PLA) Air Force (PLAAF) as a case study about Chinese defense reforms. One reason for focusing only on the PLAAF is to illustrate the wealth of information that has become available from Chinese sources.

Our thesis is that the PLA is principally involved in reform as "regularization" (zhengguihua) rather than reform as modernization (xiandaihua). Reform as regularization involves improving the training, organization, strategy, policy, practices and personnel of the PLA. Reform as modernization involves equipment and weapons. The key point is that regularization is an internal activity of the military. Modernization is an external process involving research institutes and factories that are not part of the PLA. The rhetoric of reform has sometimes led to confusion, but the differences are significant. The PLA can do something about regularization; it is at the mercy of its domestic defense industrial base for modernization.

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We further propose that the pursuit of regularization in China's military has led to the reappearance of professionalism--a point that is still debated. Although the term "professionalism" seldom appears in PLA defense literature, the phenomenon exists even though there are still extensive political pressures. Aside from any political anxiety about professionalism in the PLA, we conclude that the new nemesis of military professionalism and regularization is the pace of equipment modernization. The problem is that eventually the lack of modern equipment will serve as a frustrating inhibitor of regularization.

Defense Reform: A New Era of Inquiry

Historians will view the 1980s as one of the most important decades of modern China. As early as 1987 Chinese writers began to sum up the achievements and problems of the "decade of reform."¹ Even optimistic reformers acknowledged they sometimes had been too naive and had not recognized the complexity of the problems they set out to redress. In one sense the relative eclipse of the post-Mao reformers in the spring and summer of 1989 was a case of reform fatigue: increasingly, it appeared that perpetual reform was an oxymoron. The Tiananmen Square incident did not mark the cessation of reform, but in a tragically stark manner it brought into focus the waning of political stamina of reformists and the growth of social and economic stress. Changes have continued, but the earlier flavor and heady optimism are no longer evident. Regardless of how compelling reform may be, it is difficult to sustain year after year.

Defense reform was a central element on the agenda of Chinese reformers. Party leaders imposed most reforms on China's social, economic or political systems. It is commonly argued in some analysis that China's military establishment was a reluctant participant in reforms. Because the spectrum of reform programs was broad, the attitudes and responses of military personnel and organizations varied according to specific initiatives. We argue in this analysis that defense reform in general had a surprising number of military supporters. Specific aspects of defense reform naturally provoked equally varied reactions among military members and civilians. Rather than looking at Chinese defense reform in general, we use the People's Liberation Army Air Force (PLAAF) as a case study.

One of the more widely cited doctrinal justifications for Chinese defense reform is the "three hua's": revolutionization (geminghua), modernization (xiandaihua) and regularization (zhengguihua).² Modernization of the PLA fundamentally applies to equipment. There are rarely references in Chinese analysis to modernized soldiers.³ The exact meaning of revolutionization of the army remains debatable. In many ways it is a catch-all phrase or process that epitomizes the constant regeneration of communist ideals and traditional military values. Nearly all substantive military reforms were introduced under the rubric of regularization.

Since the founding of the PLAAF, its leadership has frequently and unevenly pursued regularization and modernization. Regularization of the air force has involved people, resources, objectives, processes and institutions that basically are internal to the PLAAF. In

short, they are factors over which the air force has some degree of control. Chinese politics, society and the economy, however, also constrain air force leaders in making internal changes. Conversely, modernization of the air force's aircraft and equipment involves external factors. The PLAAF is solely dependent on what China's aviation industry--with or without foreign assistance or technology--designs, develops, researches and produces. Regularization of the air force is not pursued at the expense of equipment modernization. Equipment modernization, which is beyond the control of the PLAAF, does effect regularization. The investment in regularization may begin to atrophy over time because military training cannot effectively incorporate new strategies and tactics without utilizing the requisite modern equipment.

In this study we equate Chinese defense reform with regularization. The history of the PLA after 1949--especially the PLAAF--has been one of repeated efforts to convert guerrilla forces into a conventional state army. The duration of the conversion process and its impediments are particularly informative. On the one hand, they draw attention to the unusually severe political shocks that have impeded the conversion or regularization of the military. On the other hand, they draw attention to regularization as a recurrent PLA effort to recover from the political shocks and revitalize China's military forces. It was therefore not difficult for many senior military leaders to embrace defense reform in the early 1980s. Reform, change, revolutionization, modernization and regularization had long been part of the PLA's lexicon of conversion terms.

An implicit objective of our research is to illustrate the considerable information about the Chinese military that became available during the decade of reform. Previously, the subject of Chinese national security was a "forbidden zone" in China. For the greater part of 30 years there was virtually no public or scholarly discussion of national security in China. Since the early 1980s, however, there has been a proliferation of published Chinese books about defense and security matters. Additionally, Chinese and Western military attaches, representatives of the PLA and scholars from Chinese think tanks that are concerned with national security have provided fresh insights.⁴

Foreign analysis of the PLAAF traditionally has focused on air order of battle enumerations and predictions about equipment procurement. There also were no publications or books from the People's Republic of China (PRC) about the PLAAF. Understandably, the Chinese air force was viewed as an organizational clone of the PLA ground forces. There was no corporate air force history and no revealed organizational culture. The Chinese air force was a classical Sinological shadow. This perception was not so much flawed as it was incomplete. Virtually nothing was written in China to give the air force--or most other military organizations--any detailed identity. In short, China's military was often understood and described in one dimensional contour.⁵

During the decade of reform, the PLAAF and its officers began to reveal glimpses of the air force's corporate identity. Vague contour lines gave way to depth, texture and variation. In the late 1980s several histories of the PLAAF were published in China.⁶

Chinese aviation journals also published periodic vignettes about China's air forces.⁷ In general, the decade of reform ushered in an unprecedented proliferation of Chinese scholarship and research about defense and national security matters.⁸ What is normally absent in the Chinese literature is research that integrates the diverse Chinese sources of information into a composite analysis of the PLAAF. Notwithstanding the numerous defense books that have appeared in China, the most comprehensive studies about the Chinese military are still published outside China.⁹

Regularization and Irregular Conditions

Regularization has been a longstanding reform objective in China. As a goal and process it predates the decade of reform. The pursuit of regularization of the army has implied the existence of irregular or abnormal conditions and practices. One PLA analyst compared the problem of irregular practices in the PLA to a wooden bucket in which the staves are of uneven height: the bucket can only be filled as high as the lowest stave.¹⁰ The solution to abnormal and arbitrary practices another writer in Liberation Army Daily argued, is a clear set of military rules and regulations. He pointed to conditions within the PLA in which leaders "lose their bearings" because missions and responsibilities are unclear. Drawing upon a civilian metaphor, he observed that many times military leaders "'work hard in a bureaucratic manner and get exhausted like firemen.'" He advised that "regularity in the work of the military units is not mysterious at all, and we do not need to explore and seek such regularity bit by bit from the very beginning."¹¹

The search for regularization in the PLAAF--as in the other services--has been a search for normalcy; established rules and regulations; specified standards of performance; organizational structures that meet policy and mission objectives; standard measurements of leadership; regular systems for managing material, budgets, personnel and facilities; established rank structures and criteria for determining promotions, awards and retirement; commonality in job descriptions and responsibilities; and rational relationships among strategy, force structure and training.

The nadir of regularization in China's military was during the Cultural Revolution. The prevailing ideological values came close to making irregular practices a Maoist virtue. Revolutionary spontaneity and disdain for convention and rules supplanted order and discipline--the normal virtues of military institutions. In the early 1950s, regularization was the process of converting a guerrilla army into a conventional army. During the years of the Sino-Soviet rift it was a reaction to military dependency that prompted a search for "an army with Chinese characteristics." The Cultural Revolution was the antithesis of regularization in which the abolition of military ranks was the most outward manifestation. For China's military, the consequences were demoralizing and destructive. This article is, therefore, a study of how current efforts to reform the PLAAF are part of a longer historical pursuit of regularization.

Three prefatory observations are in order. First, the pursuit of regularization can be a useful indicator of military professionalism. In recent years there has been a renewed debate among western scholars regarding the existence of professionalism in the PLA.¹² Analysts routinely turn to Samuel Huntington, Bengt Abrahamsson and others who have proposed criteria to assess professionalism in military organizations. These include: specialized knowledge, a sense of corporateness, non-involvement in domestic political affairs, and internal codes of conduct or ethics.¹³ The highly developed infrastructure of military organizations provides an environment for corporateness and for acquiring specialized training and education. To borrow a term used by Chinese Communist Party (CCP) party workers who are responsible for strengthening grass-roots party groups, the PLA also provides a framework of "organizational life" within which professional values are nurtured.¹⁴

Second, defense reforms commonly center on administrative changes such as reorganizations, planning, programming, budgeting, training and procurement. Western assessments of China's defense reforms have sometimes concluded that a scarcity of funds and technology has prompted PLA leaders to pursue easy, low cost reforms (i.e., regularization) rather than modernization (i.e., new weapons). In reality, Chinese defense reform initiatives have resembled those pursued in the west.¹⁵ This observation requires that we make an important distinction. PLA modernization is not the same as defense reform. How the PLA efficiently administers its organizations, trains its forces and procures equipment are proper objectives of reform or regularization. Conversely, what weapons the PLA procures and how the defense industries produce them are elements of modernization.¹⁶

Third, the pursuit of defense regularization in the 1980s did not mean all earlier Chinese efforts at regularization had failed. The PLA was not entirely a reluctant object of reform. In many ways, regularization of the PLA mirrored broader social and economic reforms such as "youthification," higher educational standards, greater separation of party and administrative functions, leaner organizations, greater planning and budgeting oversight and accountability systems. Defense regularization, however, had been a recurring process. The problem was not so much that reforms had failed but that reforms invariably only changed things at the margins. In the United States, for example, there has been a succession of major defense reforms since 1947. In China, as in the United States, the targets of defense reform are resilient; hence reforms seldom can demonstrate clear successes.

THE COURSE OF PLAAF REGULARIZATION

The Expansion Years: 1949-1957

The PLAAF was formally established November 11, 1949. Chinese historians trace the origins of aviation activity among CCP members to 1924. Between 1924 and 1949, CCP aviators and technicians came from three sources: the Guangzhou Aviation School (via the Huangpu Military Academy); the Xinjiang Aviation Unit which was started by Chen Yun; and the Northeast Old Aviation School which was the predecessor of the PLAAF Aviation

School in Mudanjiang.¹⁷ Two Soviet-trained aviation pioneers, Chang Qiankun and Wang Bi, began shaping communist concepts for the use of air power in the early 1940s at Yan'an.

On the eve of establishing the PLAAF, Chinese communist forces had fewer than 3,000 trained aviation personnel. There were 202 pilots, 30 navigators, 2373 mechanics, three engineers and miscellaneous personnel. There were only 159 foreign-made aircraft (21 different types) but 542 airfields. Airmen from the communist movement constituted 88 percent of the pilots but only 15 percent of the mechanics. Personnel "accepted" from the Kuomintang (i.e., Nationalist) forces represented 85 percent of the mechanics and an even higher percentage of technical personnel.¹⁸ More than 100 Japanese pilots and technically trained ground personnel remained in Manchuria after 1945. They were part of the initial contingent of instructors at the Northeast Old Aviation School.¹⁹

In March 1949, the CCP's Military Commission transferred a contingent of 64 personnel from the Northeast Old Aviation School to Beijing. Their mission was to establish a transitional organization prior to the establishment of an air force. It was called the CCP Military Commission's Aviation Bureau (hangkong ju). As more Nationalist units surrendered their troops and equipment, the scope of the bureau's responsibilities quickly increased. The staff nearly tripled in size. In October the bureau became the Air Force Headquarters. In the military regions (MR) that existed in 1949, rudimentary MR aviation offices (junqu hangkong chu) were founded. They subsequently became military region air force (MRAF--junqu kongjun) headquarters. The early MRAF headquarters were not operational commands, rather they were mainly concerned with consolidating the aviation assets left by Nationalist military units and civil aviation companies and organizations.

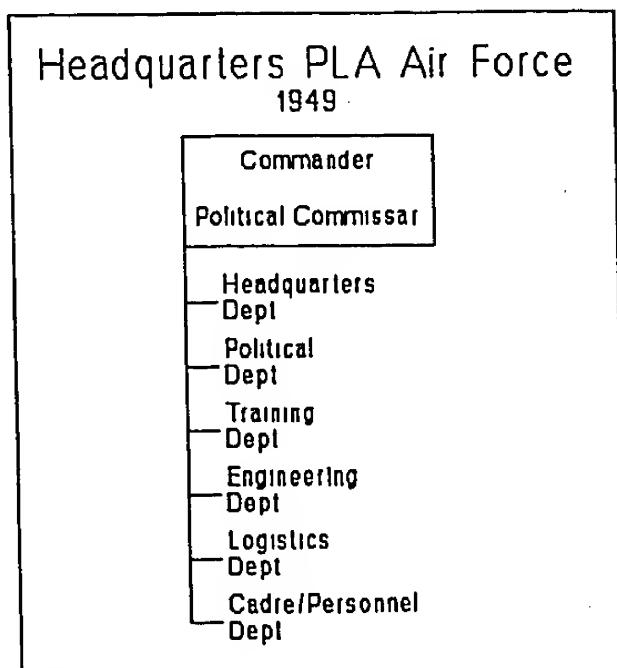


Figure 1

The headquarters organization of the PLAAF as it existed in 1949 is shown in Figure 1. There were six departments below the commander, political commissar, deputy commanders and deputy political commissars. In the earliest days of the PLAAF, the major stress was placed on organizing effective central leadership. There were simply too few human resources to worry immediately about complete and competent staffing of MRAF headquarters. Initially, moreover, there essentially were no operational units (budui). In addition, the Aviation Bureau was not merely concerned with military aviation matters such

as air space control and air defense, but it also was responsible for consolidating civilian aviation and salvaging the remnants of an aviation industry.²⁰ As a result, several matters dominated the PLA aviation agenda in 1949. Some of them were resolved within a few years, but many of them continued to influence the developmental course of the PLAAF, the defense aviation industry and civil aviation for at least the next four decades.

Air Defense. Until the PLAAF and PLA Air Defense Force (fangkongjun) merged in 1957, the air force's only air defense assets were its aircraft and a few radar units. The Air Defense Force, which had anti-aircraft artillery (AAA) and most of the radar troops, was also responsible for air defense of the large cities.²¹ Although the PLAAF took over all of the Air Defense Force's assets and responsibilities in 1957 and formed its surface-to-air missile (SAM) branch in 1958, it appears that the air force has not yet completely integrated the aircraft, AAA, and SAMs in an overall air defense system.

Civil Aviation and Air Space Control. The air force turned over most of its commercial aviation transport responsibilities to the Civil Aviation Administration of China (CAAC) in 1950.²² Although it was comparatively easy to separate commercial air travel from military operations, the PLAAF still retains operational control of all but a small fraction of Chinese air space. As a result, civilian control of airways is limited to narrow "air corridors" or airways.²³ Meanwhile, the international trend has been toward civilian management of air traffic control while militaries retain responsibility for air defense.

Aviation Industry. A more difficult problem was how to handle the aviation industry which in 1949 was composed mainly of 32 military aircraft maintenance facilities and 4,700 workers. The air force initially proposed that it would transfer to the Ministry of Heavy Industry those factories which had a manufacturing capability. It was soon evident that repair and maintenance functions could not be separated from manufacturing. The PLAAF eventually surrendered most of the factories with the understanding that it could take back some of them once the aviation industry began to develop. It did precisely that between 1955 and 1957 when it resumed control of six factories.²⁴

Soviet civilian aeronautical assistance eventually led to the formation of the Third Ministry of Machine Industry (sanjibu or 3rd MMI).²⁵ Its primary task was the manufacture of military aircraft, although in principle the 3rd MMI also proposed to make civilian aircraft. For many years, however, its only client was the PLAAF. The relationship of the PLAAF to the aviation industry never became close, although both sides have avoided drawing public attention to the problems in the relationship. From its beginning, the PLAAF was never comfortable relying on external maintenance for engines or airframes. That concern explains in part why the PLAAF was clearly intent on establishing its own in-house network of repair factories in the late 1950s. For many years the PLAAF often had a senior officer serving as a deputy minister in the aviation industry. The aviation industry did not succeed in clarifying its subordination to the State Council rather than the air force until early 1972.

Human Resources. Manpower was a central issue.²⁶ There were decidedly different military experiences found in the combat-tested PLA leaders and the technically savvy graduates of the Northeast Old Aviation School. Most strikingly, the latter had not seen much fighting prior to the Korean War. There were even sharper differences between PLA soldiers and Nationalist aviation personnel who were "accepted into the air force." The differences involved not only politics, but fundamental attitudes toward technical training and skills. The red-versus-expert dichotomy had an early manifestation within the air force where technical competence was unavoidable. The immediate emphasis on training was designed not only to fill a technical vacuum, but also to lessen dependence on former Nationalist personnel with questionable loyalties. Much later in PLAAF history this dichotomy between technical and non-technical personnel took a form more similar to that found in Western air forces: aviators or "operators" and support personnel.

Equipment. PLA leaders also faced immediate problems regarding aviation equipment. Virtually none of the "left behind" equipment had been manufactured domestically. Even ground facilities (airfields, hangars, factories, repair depots, fuel dumps) were extensively influenced by foreign engineering. The residue of aviation equipment was so disparate that it would have been impossible to use it as a foundation for a new air force or aviation industry—even if communism had not been a divisive issue for the governments of foreign suppliers. The pursuit of a standardized, modern air force, as well as the indigenous capability to produce aircraft, led to meetings in Moscow even before the PLAAF was founded. The pursuit of standardized air assets and self-sufficiency are therefore deeply grounded in the origins of the PLAAF. These elements of PLAAF institutional memory are frequently underestimated in foreign analysis of Chinese effort to modernize its military equipment.

Political Reliability. Political reliability also was a major concern. It gave rise to an especially visible, long-term dominance of leaders with political commissar backgrounds. "Flying machines" required more technical skills to operate and maintain than were customarily found among guerrilla fighters from the PLA ground forces. Consequently, the early technical core of the PLAAF was not necessarily communist by choice. In the main, they had been the enemy. Political reliability became a less pressing issue over time, but its early urgency provided the entree for nearly three decades of political commissar dominance of senior PLAAF leadership.²⁷

Service Autonomy. Core PLA leaders unmistakably rejected any emerging trend toward organizational autonomy or equality for the PLAAF. The PLAAF was a "new service" (xin junzhong), but its roots and future—PLAAF cadres were told—were to be the Liberation Army.²⁸ In effect the new air force was expected to behave more like a branch (bingzhong) than a service (junzhong). Not only was there apprehension that air force personnel might call for some form of autonomy from the army, but there also were PLA personnel who, like some foreign counterparts, argued that there was no mission in the army for aviation.²⁹

Significantly, the PLAAF's first and most senior leaders were not drawn from the ranks of early communist aviators. An autonomous group of aviation leaders was not desired in 1949. Liu Yalou, whose roots were in the 14th bingtuan of the Fourth Field Army, was the first commander. Xiao Hua, the political commissar, was from the 13th bingtuan.³⁰ Two other senior leaders had some aviation experience.³¹ In August and September 1949, 2515 members of Liu Yalou's 14th bingtuan transferred from Wuhan to Beijing to form the core of the PLAAF headquarters in conjunction with the Aviation Bureau.³² The PLA wanted to prevent any nascent aviation autonomy, but there clearly were problems finding senior leaders with any combat experience. The PLAAF was not formed from any preexisting PLA air arm. Its disparate origins were found among about one hundred CCP and Nationalist pilots, technicians and mechanics. They had defected, were captured or belonged to the CCP underground within the Nationalist army. There also were guerrilla fighters who were transferred to the PLAAF. In its infancy the manpower composition of the PLAAF was far from homogeneous.

A number of factors helped bring focus to the PLA's emergent air forces. First, there was the need to organize an air defense of Beijing (then called Beiping). Nationalist B-24 bombers attacked the city on May 4, 1949. Second, Nationalist air forces also frequently attacked Shanghai. The most serious attack was in February 1950 when 1,400 people were killed.³³ Air defense had become a pressing issue. Third, CCP leaders soon became occupied with what was to become the long-term objective of liberating Taiwan.³⁴ Fourth, the lack of access to western aircraft parts hastened a shift toward a future aircraft inventory based on Soviet technology. Finally, the outbreak of the Korean War in June 1950 became the most important galvanizing force in spurring the development of the PLAAF. The Korean War was to the PLAAF what WW II and the War of Liberation were to the PLA's ground forces.³⁵

Three important outcomes of these factors were: an integrated inventory of aircraft of Soviet origin; the acquisition of a foundation for an indigenous aircraft production capability; and a sense of combat maturation for the PLAAF's first generation of aviators--and future commanders.

Notwithstanding the many difficulties the PLAAF faced, they had reason to be heartened by the early growth of the air force. By 1954 they had acquired 3,000 aircraft which were organized in 28 air divisions and 70 regiments. At least 12 academies or schools had been founded. The institutions trained 5,945 pilots, 24,000 technicians, 396 cadres, 690 political cadres, and 310 logistics cadres. PLAAF histories are unclear as to whether or not their goal of 290,000 airmen was realized by 1954.³⁶

The Sino-Soviet Split: 1959-1961

The 1950s were the PLAAF's expansion years during which there was substantial Soviet influence. PLAAF historians recall this period with a certain degree of affection and appreciation.³⁷ Soviet advisors were assigned to the seven aviation schools that were

founded in October 1949. Direct Soviet involvement in flight training began to decrease in 1951. The Sino-Soviet split was probably more traumatic for the PLAAF than it was for PLA ground forces because the efforts to modernize China's air force were especially dependent on technology. The rift also prompted an unanticipated institutional maturation for the PLAAF. Self-reliance became more than a political slogan for the PLAAF. PLAAF leaders quickly recognized the need to address air power and the aviation industry in terms of China's independent defense needs rather than rely solely on the Soviet model. It proved to be a torturous and lengthy process.³⁸

PLAAF staffs began a multi-year project to compile rational regulations, rules, manuals and guidance that reflected the PLAAF's needs. The education and training system was reformed and there was a new emphasis on advanced scientific skills and education for PLAAF officers and technicians. The PLAAF's sudden independence from direct Soviet influence came at a time when PLAAF personnel were still heady from their own combat experiences against the United States in the Korean War. There was an emergent atmosphere of professionalism--at least as understood in the West--that lasted until the mid-1960s. China's newly established aviation industry was on its way to being nearer world standards than it would be any time in the next three decades. It was a time when the air force also acquired the new mission of air defense. It included anti-aircraft artillery (AAA), surface-to-air missile (SAM), and radar forces. On the negative side, the Sino-Soviet split also signaled the beginning of two decades of domestic political and economic oscillations that enervated China's air forces and aviation industry.

Frustration and Optimism: 1962-1966

Throughout China recovery from the Sino-Soviet split and the Great Leap Forward was slow. There was a general need to consolidate the incomplete Soviet scientific and technological projects. The problems were especially pressing for the PLAAF. Due to a lack of engines and engine parts, flying hours fell by 41 percent in 1960. They continued to be low through at least 1963. In 1961 quality control in the manufacture of aircraft became a serious problem. The scarcity of aviation equipment and parts also compelled the PLAAF to adopt new flight training measures. These were summarized as "train harder on the ground; fly with precision through the air."³⁹ Perhaps only briefly between 1963 and 1966--before the chaos of the Cultural Revolution began--did the PLAAF feel it was finally on the threshold of regularization and modernization. These were years during which there were efforts to imbue all services with a sense of professionalism, refine the education curricula, improve the training schools, take advantage of relatively modern aircraft that started to emerge from Chinese factories, and create an underpinning of doctrine and regulations that could give direction to the air force.

The Cultural Revolution: 1966-1976

From the beginning of the Cultural Revolution in 1966 until the mid-1970s, the PLAAF stagnated. In matters involving flight safety, education, training, strategy and tactics,

PLAAF historians claim there was actually atrophy.⁴⁰ Civilian units, under the guise of making revolution, often occupied military bases. In many cases the military property was never returned to its units even by the late 1980s. In other instances, military school compounds were destroyed as well as teaching materials, books and equipment. Instructors, researchers and staff were often scattered throughout China. In the worst cases, they died or were killed.

Ironically, the war in Vietnam, plus Lin Biao's paranoia about China facing an imminent large war, led to more flying hours than in the past. However, the training was haphazard, maintenance was poor and the "serious accident rate" for aircraft soared to 0.6 per 10,000 sorties from 0.249 in 1964.⁴¹ Non-flying or ground training (dimian xunlian) virtually stopped because almost all PLAAF schools were closed for nearly six years. This was the "lost generation" for China's youth and it was no less true for the PLAAF. PLAAF historians refer to pervasive stagnation or deterioration.

For the air force the cessation of education was more complicated than it was for society as a whole. The disruptions resulting from the "stop classes, make revolution" activities were disruptive but did not pose the most harmful consequences. The major problem was Lin Biao's advocacy of an imminent war doctrine. An emphasis on war preparations and political activism led to far reaching changes. In November 1969 this view led to the elimination of 13 of approximately 16 technical schools and academies in the PLAAF. The expected training goal for the Cultural Revolution years was 21,900 students, but only 5,650 graduated. In 1967 and 1968 the achievement levels of graduates were so low they could not be used in their gaining units. At the PLAAF Second Aviation School authorities claimed the elimination of aviation theory courses between 1967 and June 1970 "resulted in an increase of aircraft accidents at the school and operational bases."⁴² There were similar results in 1970 when some technical courses resumed for periods of only three to eight months.⁴³

The reason for this devastating cutback in non-flying education was a major expansion of flight training in preparation for imminent war. Four flying schools were added in 1967 and 1968. Annual flying hours for flight schools increased dramatically: 1966 (180,000), 1968 (260,000), 1970 (310,000) and 1972 (400,000).⁴⁴

There were also extensive difficulties in the aviation industries. Between 1969 and 1971, disruptions led to severe quality control problems. As one history of the aviation industry notes, it was a time of industrial "anarchy or semi-anarchy. . . . the whole industry was in the difficult position of trying to preserve order."⁴⁵ The aviation industry places the blame on the direct interference of PLAAF commander Wu Faxian and the "military." They claim, for example, that in 1971 alone there were 27 types of aircraft authorized to be developed. Even though there were no blueprints for any of them, the industry was expected to bring them to the production stage in two to three years. Development time for aircraft stretched out to 10-15 years or more because production decisions were constantly delayed due to protracted development problems or mere indecision. Between 1969 and 1971, 46

projects went into operation without the necessary materials or designs: 36 of the projects had not even been approved.⁴⁶

Interestingly, biographies of PLA and PLAAF leaders are often glaringly silent about these years. Although a number of books have been published in the West about the difficulties of the Cultural Revolution years, there have been no similar books that specifically focus on the consequences for the Chinese military. Recent military histories are guarded in their assessments. While not understating the problems that arose, they have not "hung out the wash" as has been the case in some of the personal accounts.⁴⁷

Regeneration: 1972-1978

The PLAAF emerged from the Cultural Revolution--including the residual years of leftist influence in the early 1970s--as an organizational shell. The operational forces were intact but their efficiency had been degraded. Although the basic administrative infrastructure was still in place, the routine functions, operating procedures, training, education, tactical and strategic planning, and the corporate identity of the air force were nearly moribund. Discipline had seriously eroded and standards of competency (e.g., leadership, flying, technical support, administration) were also low.⁴⁸

The PLAAF decidedly needed to pursue again a course of regularization, but no military service in China had ever unilaterally undertaken reform or regularization. In September 1971, PLAAF commander Wu Faxian was implicated in the Lin Biao Affair and was sentenced in 1981 to 17 years of imprisonment. For almost two years the air force did not have a commander. Ma Ning, a former deputy commander of the Lanzhou MRAF and politically active figure in Jilin during the Cultural Revolution, finally became PLAAF commander (1973-1977). He was, however, largely a transitional figure. Although Ma Ning had been a commander, his rise to prominence in the PLAAF seems linked more to his political views than his aviation skills. In neither the PLA nor PLAAF were pressing problems seriously addressed during the early 1970s.

1975 to 1977 was a critical period for the PLA as Deng Xiaoping consolidated his political and military power.⁴⁹ In addition, Mao Zedong and Zhou Enlai passed from the scene and the Gang of Four fell in 1976. Amid these profound leadership changes, the PLAAF took its initial steps toward regularization: Zhang Tingfa became the new PLAAF commander (1977-1985); the PLAAF succeeded in establishing the Aero-Engineering Department in 1976 as one of the four first-level departments to address aviation maintenance problems; and in 1977 all military services embarked on a five-year program to reestablish and regularize military training and education.⁵⁰

China's civilian defense aviation industry, which once had the potential to become a technologically competitive manufacturer of military aircraft in the mid-1960s, emerged in the late 1970s further behind world standards than it had been in the late 1950s.⁵¹ The aviation industry cites December 1971--three months after the deaths of Lin Biao and Wu Faxian--as

its turning point. Zhou Enlai and Ye Jianying called for a conference on the continuing problem of quality control in the aviation industry. The Central Military Commission (CMC) subsequently addressed deeper, underlying problems and within three months it "adjusted" the leadership of the industry.⁵² The point that aviation industry historians subsequently have emphasized is that in March 1972 the CMC abolished the "air force relationship with the aviation industry and restored direct subordination [of the aviation industry] to the State Council."⁵³

Reform Begins: 1978-1985

No matter how operationally compelling regularization was for any of the PLA services, it was virtually impossible to initiate without the explicit support of a figure such as Deng Xiaoping. The pursuit of regularization--efficiency and necessity aside--was, in reality, a rejection of an extensive structure of military strategy, philosophy and doctrine. The Third Plenum of the Eleventh CCP Congress (December 1978) officially sanctioned a departure from past practices. Regeneration was not enough; reform was expected and encouraged.

Beginning in 1978, the PLAAF embarked on numerous reforms and changes in its operating style. The first step was an overall rectification of organizations, practices and procedures. Air force leaders recurrently held conferences where they addressed the need to improve maintenance standards and practices. PLAAF leaders began to focus more intently on substantive issues such as specific missions for aircraft in the inventory, strategic research and safety guidance. A renewed emphasis was placed on drafting operating regulations. Air Force units also participated in joint service exercises. Budget planning was undertaken in three-year plans. The CMC authorized the restoration of flying grades and flight pay. Finally, PLAAF personnel began to attend international conferences. The commander, Zhang Tingfa, alone made approximately ten trips to foreign countries.⁵⁴ As PLAAF officers began traveling abroad, the air force became more transparent as a military service and organization. Transparency brought fresh insights about how elements of the PLA operate. Much of this new information came as China's air force was engaging in an extensive regularization of its institutions, forces and people.

ORGANIZATION OF THE PLAAF

The study of military organizations is often a tedious endeavor, but it can be informative. The following section describes the four administrative and operating levels of the PLAAF, and the nature of interaction between the PLAAF headquarters and the PLA's "three general departments" (san zongbu): General Staff Department (GSD), General Political Department (GPD) and General Logistics Department (GLD).

PLAAF-PLA General Departments Interaction

There is considerable symmetry between the functional second-level departments of

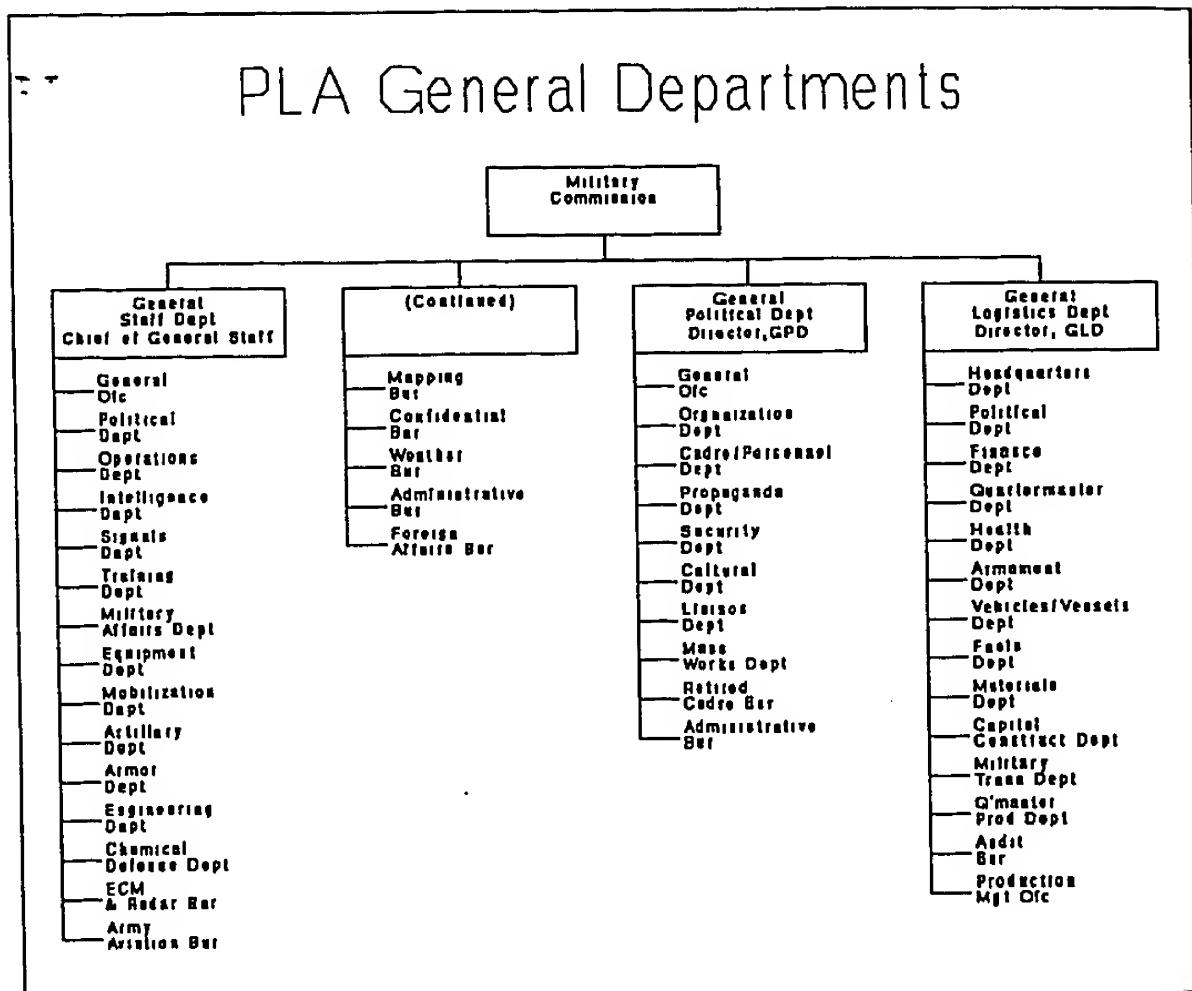


Figure 2

the PLA's three general departments (Figure 2) and the headquarters organization of the PLAAF (Figure 3). All PLAAF procurement programs, budgets, capital construction plans, manpower issues and training programs are coordinated with or determined by the relevant departments within the PLA's three general departments.

The organizational relationships are complex and diverse. While the three general departments are dominated by PLA ground forces officers, there are also air force and navy personnel who serve there. There are jointly staffed offices as well as specialized offices such as the Air Force Offices (*kongjunchu*) that are subordinate to the GSD Operations and Equipment Departments. Political officers often switch back and forth between the GPD and

Headquarters PLA Air Force

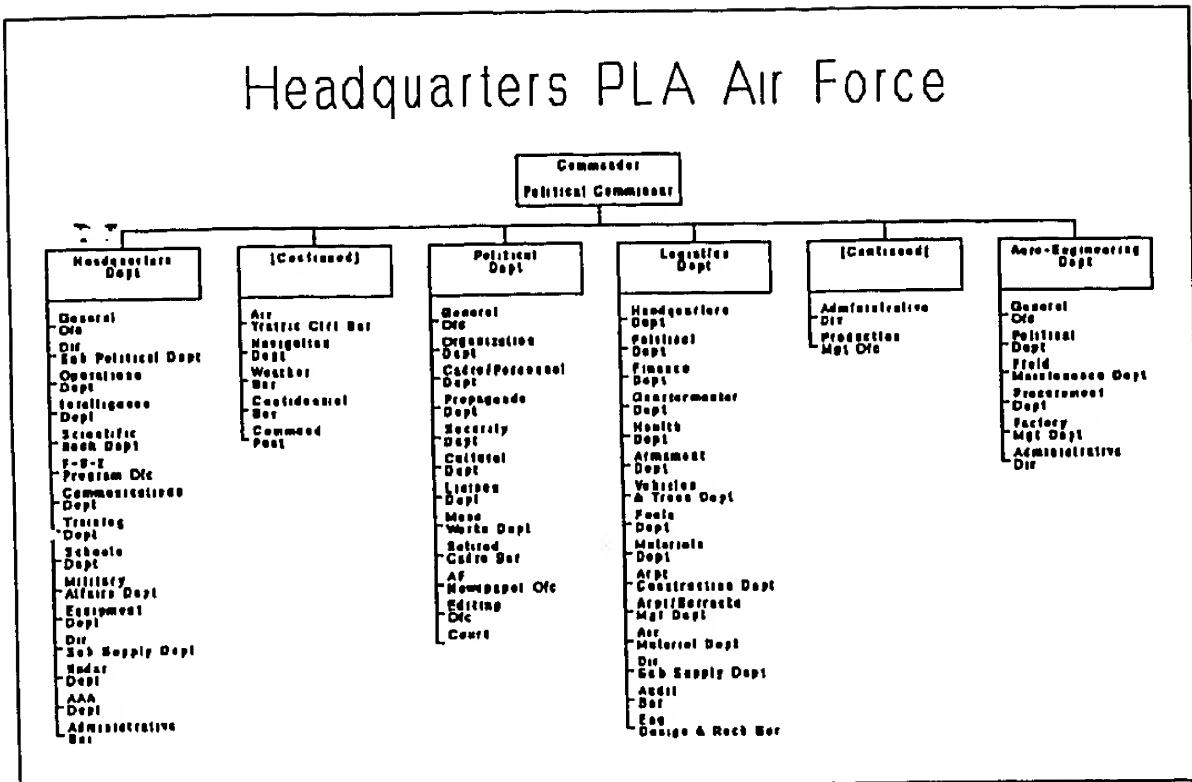


Figure 3

the PLAAF Political Department. Air force and navy officers wear army uniforms while serving on the joint staff. Service representation ensures a measure of equitable representation and technical expertise.

Headquarters Air Force

The internal organization of Headquarters Air Force (HqAF) is mirrored or replicated at each of the three lower administrative/operational levels.⁵⁵ As such, the functional elements⁵⁶ of the headquarters are an accurate reflection of the range of air force missions, responsibilities and tasks. At the apex is the senior leadership: commander (general), political commissar (lieutenant general), four deputy commanders (lieutenant generals), two deputy political commissars (lieutenant generals), chief of staff (major general), plus the directors (major general) of the Political, Logistics, and Aeronautical Engineering Departments. These twelve officers comprise the air force's Party Standing Committee. Party standing committees at each lower PLAAF echelon consist of similar sets of commanding officers. The Party Committee itself consists of the Standing Committee plus the commanders and political commissars of the seven MRAFs.

The general organization of the PLAAF Headquarters is reasonably defined. What is unclear is the command relationship between the functional offices and the senior leaders.

For example, the four deputy commanders are not concurrently the directors of the four first-level departments. Each deputy commander has oversight responsibility for one of four permanent oversight areas: training, operations, air defense, and logistics/equipment/ R&D. Only the logistics oversight area is not a subordinate department of the Headquarters Department. Additionally, they have secondary oversight responsibility for other second-level functional areas. The division of responsibility clearly is not synonymous with the "big four" departments. In selecting deputy commanders, some consideration is usually given to requiring expertise in one of the four areas of permanent oversight.

The chief of staff is not a coordinator of the "big four" departments, rather he only directs the Headquarters Department. His four deputy chiefs of staff, who are not lower level counterparts of the four deputy commanders, oversee clusters of second-level departments within the Headquarters Department. They have no lateral responsibilities in the three other first-level departments.

In the U.S. military the terms "rank" and "grade" are effectively synonymous. In the PLA they are quite distinct. Military ranks (junxian) were reintroduced in 1988 with some difficulty. Perhaps the key obstacle was accurately aligning rank with functional responsibilities and status based on length of service. Grade (zhiwu dengji) or army equivalent position (AEP) currently is a more accurate reflection of authority and responsibility across service, branch and organizational lines. Grade reflects asymmetries of authority among organizations and individuals who seemingly have equal status.

Thus, while rank is a key indicator for foreigners, AEP is still the key indicator within the PLA. For example, the PLAAF commander and political commissar have different ranks but they have the same grade--each has the AEP of an MR commander. A more striking case is found in the PLA Navy (PLAN) where the commander has a lower rank than the political commissar, but each one has the same grade or AEP. The relative importance of departments cannot necessarily be determined by first or second level-status, or by the military rank of the department directors. For example, the Political and Logistics Department directors and the chief of staff all have the AEP of a MR deputy commander; however, the Aero-Engineering Department director only has the AEP of an army (jun) commander--the same as the deputy chiefs of staff and deputy directors in the other "big four" departments.⁵⁶

PLAAF officers routinely refer to two levels of departmental organization within the HqAF. The first level departments (yijibu) consist of the "big four" (si da bu): the Headquarters, Political, Logistics and Aero-engineering Departments (bu) which are directed by major generals.⁵⁷ Second-level departments (erjibu), whose directors are senior colonels or colonels, consist of offices (shi), departments (bu) or bureaus (ju), plus specialized elements such as the PLAAF Procuratorate and Court.⁵⁸ Most second-level departments have various subordinate divisions/offices (chu/ke). Each of the 20 major elements in the Headquarters Department has about 30 personnel.

The PLAAF's internal operational chain of command is fairly straight forward.

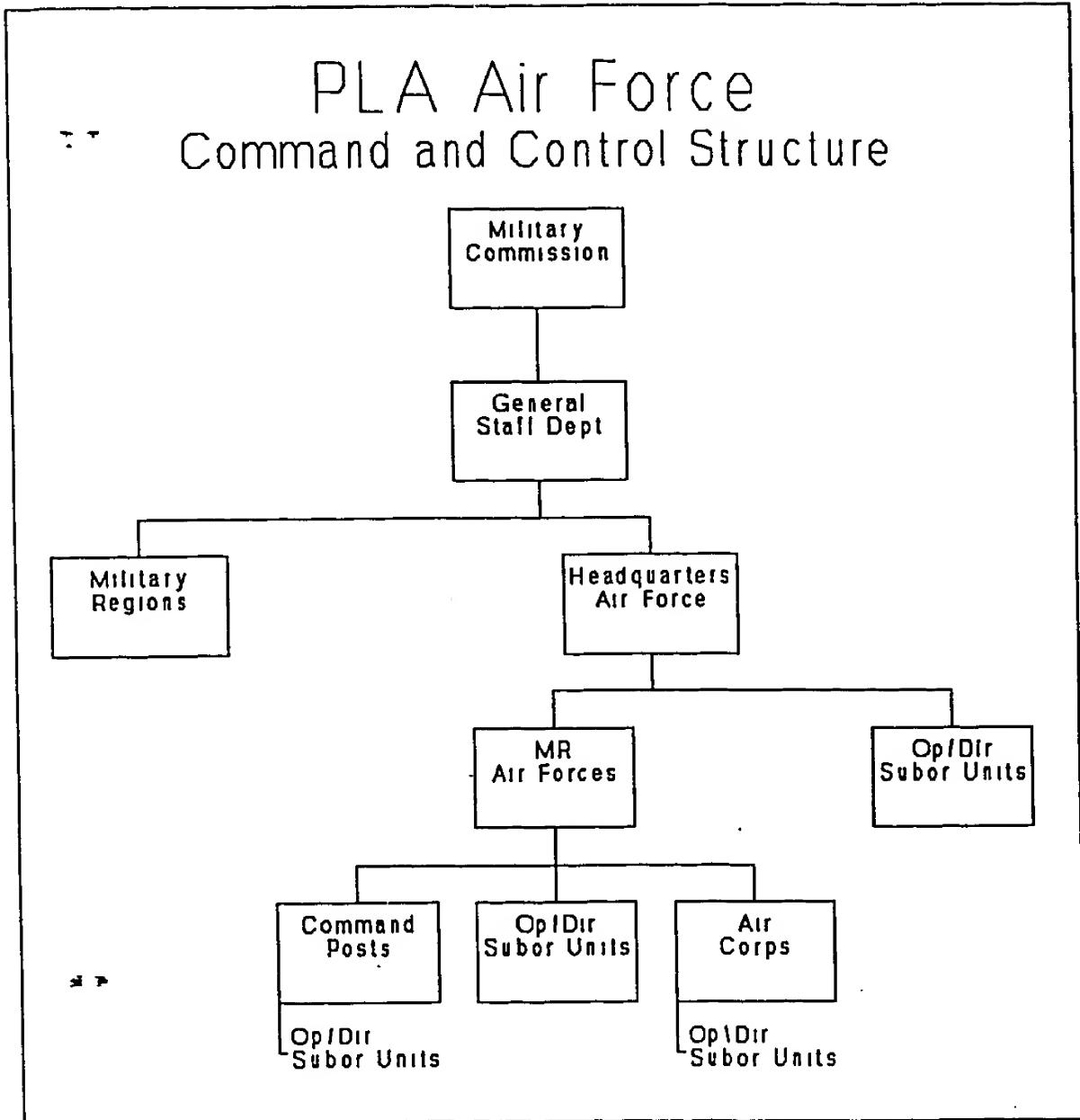


Figure 4

Broadly speaking, the internal air force operational and administrative hierarchy is organized into four distinct levels (see Figure 4): Headquarters Air Force (HqAF) (kongjun); Military Region Air Force Headquarters (MRAF Hq) (junqu kongjun); Command Posts (zhihuisuo) and Air Corps (kongjun jun); and Operational units (budui). Operating units may be directly subordinate to any of the top three levels.

Military Region Air Forces (MRAF)

Presently, the number of MRAFs corresponds to the seven PLA military regions: Shenyang, Beijing, Lanzhou, Nanjing, Guangzhou, Jinan and Chengdu. The total number of MRAF headquarters changed several times since 1949. Recent changes have corresponded to new military region boundaries, but air regions were not always coterminous with the military regions. The concept of military regions is closely tied to the CCP's field armies that fought against the Japanese and Nationalist forces. Regardless of specific historical influences, the military regions have come to represent more than convenient administrative demarcations. For planning and operational purposes, they are now viewed as theaters or distinct campaign arenas. Primary emphasis is placed on regional defense. MRAF Hqs, per se, may have some operational assets that are directly controlled by it. In the main, however, the operational air units within a MR are separate from and subordinate to the MRAF Hqs which exists primarily as an administrative echelon. Each MRAF Hqs nonetheless has an operations center that is part of the air force's overall operational chain of command; and the MRAF commander is the MR commander's advisor regarding aviation matters.

MRAF commanders are lieutenant generals. The position of MRAF commander is a key step for promotion to one of the five senior positions in the PLAAF. MRAF commanders normally have served as a deputy MRAF commander, but not necessarily in the same region. The next step for a promotable MRAF commander is PLAAF deputy commander. General officers on the HqAF staff--including the chief of staff--normally must have their "tickets punched" in the senior MRAF Hq positions before they can become a PLAAF deputy commander. A premium is now placed on having command experience at the regional level of military operations. It may be premature to conclude that the Chinese have embraced "joint operations" in the same spirit that exists in the West. Nevertheless, the PLA and the PLAAF are moving toward more integrated defense.

An MRAF Hqs commander literally "wears two hats" or--in the Chinese case--two uniforms. When General Larry Welch, a former Chief of Staff of the United States Air Force, visited the Guangzhou MR in April 1989, PLAAF Lieutenant General Liu Heqiao met the Welch delegation wearing a green PLA uniform in his capacity as a Guangzhou MR ~~deputy~~ commander. At the PLAAF-hosted dinner Liu wore the blue PLAAF uniform of the MRAF commander.

Command Posts and Air Corps

The PLAAF currently has eight Command Posts and four Air Corps.⁵⁹ These are intermediate level elements that are responsible for the air defense of specific cities. Practically speaking, there are no functional differences between the two organizations, although an Air Corps is viewed as having slightly less stature than a Command Post. The number of Air Corps and Command Posts has changed frequently over the years with some Command Posts replacing Air Corps in the 1980s. The trend during the 1990s presumably will be for Command Posts to replace the remaining Air Corps. PLAAF officers generally

state that the Air Corps and MRAF Hqs are structured almost identically as operational and administrative organizations. Command Posts are structured primarily as operational organizations with their administrative functions performed by an MRAF Hqs.

Operational/Functional Units

The budui or military unit is a functional, non-administrative unit. It may be a fighter division, radar unit, combined brigade or zhishu budui (directly subordinate unit) such as a research institute, hospital, sanitorium, transportation unit or logistics organization. The term budui is routinely used among service members to convey the flavor of a functional unit rather than an administrative headquarters (jiguan) or political/party element of the military.

Chain of Command

The internal air force chain of command is reasonably clear in terms of policy, military operations and administration. PLAAF officers, however, have often added two important caveats. First, decisionmaking regarding many operational matters is decentralized. Local commanders have latitude to make on-the-spot decisions when circumstances require an immediate response, yet other operational decisions are made as high as the CMC.⁶⁰ Second, the formal chain of command does not preclude a MRAF commander from directly calling the PLAAF commander.⁶¹ Some PLAAF officers further claim that the directors of the first-level departments do not necessarily have to go through the deputy commanders or commissars before reporting to the air force commander or political commissar. Regarding staff matters, the functional offices within the "big four" departments must pass all actions through their second level General Office or Headquarters Department (in the case of the Logistics Department) before they are sent to a higher level. Operational matters are coordinated among small operations centers within the headquarters of each level of the PLAAF. The PLAAF claims that these operations are now semi-automated.

Although the normal chain of command is clear, that condition does not necessarily mean the infrastructure of the PLAAF is optimally efficient or always functions as it is planned. In China, as in other countries, defense reforms repeatedly address the problems of dysfunctionality or routinized departures from hierarchical control. The following examples illustrate some of the complexities the PLAAF faces in exercising centralized control over all facets of air force administration and activities.

Budget

The air force finance department (caiwubu)--second level--is located within the HqAF Logistics Department. It is responsible for overall budget and finance matters. At each of the three administrative levels below HqAF there also is a finance office (chu/ke) within each logistics department. That office coordinates budget and finance matters with lateral

organizations at each administrative level--HqAF down to individual units. Within the lateral organizations there are combined planning/finance offices (*jihua/caiwu chu/ke*).

Air force budgets are now based on 5-year plans and annual budget submissions. From 1978 to 1986 the PLAAF relied on 3-year budget plans.⁶² Although there is a central air force budget, PLAAF officers often imply that the budget process is not rigidly fixed. The PLAAF did not have a financial accounting system of its own until mid-1989.⁶³ Once the GSD establishes its total budget requirements, centralized funding for the PLAAF comes from the State Council through the GLD finance department. Monies are normally dispersed between March and June.

In general, the PLAAF receives three kinds of central budgetary allocations. The first is "fenced" or specifically earmarked money (i.e., to buy a specific number of aircraft). The PLAAF can only spend this money as specified by the GLD. The second allocation is "constrained funds." These funds are also earmarked by categories, but the PLAAF has some latitude in how it expends this money. The third category is discretionary funds which have no attached strings. Based upon the allocation constraints, these funds trickle down to the basic level units of the PLAAF based on budgets and plans.⁶⁴

There is a second source of funds that is not centrally controlled. In effect, it is an off-budget source of income for all four PLAAF administrative levels. This source consists of commercial enterprises, hotels, hospitals, factories, farms, mines and even airline services. Profits from these activities are substantially discretionary in nature. Unlike centrally apportioned funds that trickle down, the profits of military enterprises are carefully husbanded. In theory there is supposed to be a "trickle up" flow to the next highest administrative level where portions of the profits are redistributed down to poorer units.⁶⁵

The net effect is that HqAF has budgetary control of big ticket items, major capital construction and expenditure categories that central government planners endeavor to control through the state budget allocation process. It has much less control over the daily operating expenses of the *budui*'s, housing, care of dependents, and morale, welfare and recreation activities. Regularization has meant the compilation of regulations to prevent economic crimes and misuse of government property as well as improve economic efficiency.

Personnel

In 1990 the PLAAF had 500,000 officers, non-commissioned officers (NCO) and conscripted airmen. One PLAAF officer further indicated that the air force currently has about 170,000 military and civilian officers and 330,000 conscripts.⁶⁶ There is a centralized personnel system in which personnel assignments come under the purview of two HqAF elements: the Political Department's Cadre Department (*ganbubu*) and the Headquarters Department's Military Affairs Department (*junwubu*). The Cadre Department is specifically concerned with officer assignments while the Military Affairs Department determines manning requirements and authorizations for all PLAAF organizations. Together these two

organizations try to link qualified people with authorized billets.⁶⁷ As late as 1988, however, the PLAAF personnel system was not computerized. One aspect of regularization has been efforts to ensure that personnel authorizations for organizations are rational and justified.

In reality the PLAAF has a de facto two-tier system of personnel management. The first tier is at the MRAF level and below, where the majority of personnel matters are handled. Most operational units--hence most junior officers and conscripts--are below this level. The second tier of personnel management involves senior officers at the army or air corps (jun) level and above. Centralized control is necessary for several reasons. First, all appointments in the second tier require CMC approval. Next, officers in the second tier have "fast track" potential and may have general officer mentors. Third, some of these officers have exceptional educational qualifications (i.e., technical, foreign language, advanced degrees). There are comparatively few air force or "joint" (i.e., GSD, GPD, GLD and COSTIND) billets in Beijing, although total PLAAF personnel in the Beijing area may be as high as 50,000--nearly a tenth of the air force. Until 1990 the PLAAF was able to recruit aviation cadets directly from participants in the national college entrance examination. Beginning in 1990--apparently as a result of events at Tiananmen--the PLA's General Political Department assumed the responsibility for selecting aviation cadets..

The majority of PLAAF personnel--officers, NCOs and conscripts--serve their entire careers in the same military region and perhaps even in their native province. Pilots, for example, normally spend their entire careers in the division to which they are assigned after transition flight training. This situation strikes U.S. military manpower managers as unusual because American servicemen are frequently transferred. In reality, the infrequent transfer of troops is a fairly common practice throughout the world. In the case of the PLAAF the prevalence of regional service and normally ample manpower distributions among the military regions has meant that stringent centralized control of all air force personnel is not viewed as especially necessary.

There is no assurance this practice will always satisfy regional manpower requirements, especially in times of war. Chinese defense planners have recently given more attention to the problem of war mobilization. They have concluded, for example, that in times of general war, some local urban-rural population distributions may not adequately meet the requirements of both the armed forces and civilian industries that also require technically trained manpower to support the war effort. Some Chinese defense analysts believe that as the PLA begins to rely on more sophisticated weaponry, it will have to turn to better educated urban rather than rural youths.⁶⁸

Although PLA and PLAAF personnel do not routinely serve great distances from the area where they joined the military, extended family separations are an ongoing source of dissatisfaction within all the services. Except for pilots, whose dependents (i.e., wife and child) can live with them almost immediately, other PLAAF officers must be 35 years old, have 15 years of service, and have battalion commander AEP status before family members

may join them. Some cities also require that the spouse have a job, the officer already has quarters, and the child already has a guaranteed place at a school.⁶⁹

Training and Education

The HqAF Training Department (xunlianbu) was established as a first-level department in 1949. It split into separate first-level training (junxunbu) and schools (junxiaobu) departments in 1953. Today, they are second-level departments within the Headquarters Department and are responsible for the 26 PLAAF officer/NCO schools and academies, plus all specialized and unit training for conscripts. The Training Department oversees all conscript basic and technical training at the unit level, aviation cadet flying academies and the officer flight training portion of the Test Flight and Flying Training Center at Cangzhou Airfield, Hebei. The Schools Department is responsible for education and training at all other schools and academies, and focuses primarily on officer education. HqAF is responsible for education and training policies, mission, curriculum, organization and plans--as well as control of student assignments. The MRAF's are responsible for local party work, school administration, logistical support and maintenance of the schools and academies. The PLAAF currently has 10 flight training academies and seven transition flight training bases (i.e., one in each military region). The HqAF directly controls only one school--the Air Force Command College in Beijing--and various research institutes.

The military and technical training for conscripts, which is called "unit training" (budui xunlian) is even more decentralized. The training of technicians known as zhuanye bing (technical soldiers) is divided into three categories: "important specialized technicians" (zhuyao zhuanye jishu bing) who are trained in special training groups (dui or dadui) or regiments (tuan); "general technical soldiers" (yiban jishu bing); and "general soldiers" (putong bing) who are trained in special organizations (zhuamenmen jigou) or local units.⁷⁰ In some instances, conscripts may receive training (i.e., aircraft maintenance) at the PLAAF technical training schools in Changchun and Xianyang. NCO's are offered training courses at several places: the Changchun and Xianyang technical schools; special short classes at PLAAF schools that normally train and educate officers; and the newly established Air Force Dalian NCO School (Kongjun Dalian Shiguan Xuexiao). Intentionally, unit training emphasizes local geographical conditions, the theater threat and the kinds of equipment available to the unit. Implicit in this approach to training is the assumption that the units are unlikely to be deployed to theaters (i.e., military regions) with clearly different conditions.

The organization of PLAAF training and education is currently based on the PLA's "5-3" tier system. This system consists of five tiers of specialized/technical training and education for officers: secondary specialized; specialized college or equivalent; university or equivalent; masters degree program; and doctorate program. There also is a three-tier system of professional military education for officers (i.e., primary command/leadership training; intermediate command/leadership training; and higher command education). The PLAAF trains conscripts and volunteers in training units.

The total number of PLAAF schools and academies has changed considerably over the years. Expansion and contraction routinely have reflected policy changes regarding training objectives or war preparations. For example, when there were as many as 17 aviation schools (hang xiao), Lin Biao and Wu Faxian were advocating a doctrine of imminent war. Presently, there are only ten flying academies and 16 other PLAAF schools and academies totaling 26. Throughout the PLA there are slightly more than 100 education and training institutions--down about 12 percent from the early 1980s and a high of nearly 160 in the early 1960s.⁷¹

MISSION OF THE PLAAF

The first assigned operational mission of the PLAAF was the air defense of Beijing in 1949. During the late 1980s, air force officials routinely described the PLAAF's primary mission as the "air and land defense of China."⁷² By referring to the five branches of the air force, it is possible to more fully understand the scope of that primary mission. These branches (bingzhong) are aviation, anti-aircraft artillery (AAA), surface-to-air missiles (SAM), radar, and communications. The aviation branch, which includes fighters, ground attack aircraft, bombers, transports and reconnaissance aircraft, is the air force's main arm. The PLAAF also has airborne troops (kongjiang bing), logistics units, research institutes, hospitals and sanitoriums.⁷³ The air force's Logistics Department has its own water transport craft to ship fuel to units along the Yangzi River and coast. Published PLAAF sources also refer to informal, secondary missions such as assisting socialist construction, providing air services for disaster relief and air rescues, and artificial rainmaking support for farmers.

The PLAAF's brief description of its mission is informative. On the one hand, the terseness may be symptomatic of the "forbidden zone" mentality ("It's classified!"). On the other hand, it may also reflect a longer term problem involving the as yet nascent formulation of Chinese air power doctrine and concepts. There was little in the doctrine of People's War that compelled a serious definition of the uses of air power. In the absence of broader air force statements about the PLAAF's missions, the only real clue to the range of air force responsibilities must be deduced from the functions of its operational branches. In the case of the PLAAF, the goal of air defense includes not only aerial combat but also responsibility for the ground-based air defense of China (i.e., SAMs and AAA). Many Western militaries regard airborne forces as being part of the ground forces because the air force only provides transportation. This is not the case in the PLAAF, which has all of these missions.

The PLAAF is also silent about the different ways air power can be employed within the framework of China's active defense (jiji fangyu) strategy. How air power is employed in almost any country is far from a settled matter. In many Western countries mission statements and doctrine represent institutional and operational efforts to contain the debate within acceptable parameters. In some respects, mission statements are descriptions of jobs or responsibilities. By defining the scope of operations, military services concurrently limit and protect their "turf."

Until quite recently, the PLAAF did not have specific mission statements regarding different air combat missions (i.e., strategic air defense, close-air-support, interdiction, strategic bombing, tactical or strategic airlift).⁷⁴ The PLAAF, for example, did not formally define its ground support doctrine until 1982. Moreover, as late as 1988 there still was not a formal doctrine for strategic air defense.⁷⁵ The issue of military airlift was not addressed in regulations until 1989.

The PLAAF never faced most of the pressures and issues that led to the writing of mission statements in foreign air forces. For example, there was no existing PLA air arm before 1949; hence there were none of the doctrinal and operational disputes that existed during the early years of U.S. military aviation. There were no air assets to be divided between the PLA and PLAAF.⁷⁶ Even existing air bases and equipment in 1949 belonged to the defeated Nationalist and Japanese armies. Equally important was the defensive nature of the doctrine of People's War: there was no need for a strategic projection of air or sea power. For nearly four decades the dominance of this doctrine effectively dampened any internal air force pressure to more fully define the role of air power. Finally, there have been no emergent aviation technologies in China since the early 1960s that have compelled a broader consideration of air power options.

In short, the PLAAF never had any competitors for air-related resources or missions. If anything, the "air defense" charter of the PLAAF was so broad that it was able to expand the scope of its functions to areas not universally associated with air power. Thus, the Air Defense Force (Jiefangjun Fangkongjun) was merged into the air force in 1957. The responsibility for SAM defenses was added the following year. The PLAAF also had the charter for airborne forces (paratroops) since 1950. The extent to which PLAAF officers sought to define specific air power missions during the 1950s and 1960s is unknown, although the air force did launch a prodigious effort during those years to consolidate and compile extensive publications that represented China's specific aviation experience. By all PLAAF accounts the Cultural Revolution years were doctrinally sterile.

Given the air force's accretion of diverse air defense roles, it is surprising that the PLAAF did not become responsible for ground-based strategic missiles with nuclear warheads. That mission was assigned to an independent fourth service (junzhong)--the Second Artillery. At least one of the early PLAAF deputy commanders became the minister of the 7th MMI which was responsible for producing China's strategic missiles. The Second Artillery nomenclature nonetheless still had some of its roots in the PLAAF.⁷⁷

The PLAAF began to emphasize the formal compilation of mission statements in the early 1980s for several reasons. First, military reform in general stressed regularization, although regularization was not a new dimension of defense reform. Since the early 1950s the PLA had struggled with the process of converting the guerrilla forces of a political party into a regular army of the state. PLA writers have acknowledged that the armed forces has long operated without clearly defined responsibilities. In this regard, the PLA was much like other large Chinese ministries. Military mission statements have become the PLA's

equivalent of the written responsibility codes or contracts that reformers promoted in the civilian sector. Second, PLA ground forces began to acquire their own air assets.⁷⁸ Turf questions have become a more common part of the fabric of China's defense establishment. Mission statements have helped define responsibilities and justify resources.⁷⁹ Third, the 1979 Sino-Vietnamese border conflict compelled PLA and PLAAF commanders to address questions regarding joint operations and the appropriate role of air power. Finally, during the 1980s China's military faced unprecedented economic constraints. This situation resulted not so much from unanticipated budget shortages as it did from conscious CCP policy decisions. Initial PLA efforts to develop the equivalent of a policy, planning and budgeting system (PPBS) visibly revealed the effort to link strategy, resources and missions.⁸⁰

POST-1985 PLAAF REFORMS

By the mid-1980s the interrelated processes of domestic and defense reform were well underway. It was during the high tide of reform that Wang Hai replaced Zhang Tingfa as PLAAF commander (July 31, 1985). Wang assumed his responsibilities with a charter to further implement regularization (i.e., reform) in the PLAAF. The personal leadership he brought to the air force was perhaps as important as the prevailing expectation of change among senior CCP leaders. Wang, who was a military hero from the Korean conflict, also was the PLAAF's first commander to be an aviator. Not insignificantly, he further possessed the charisma often associated with successful military commanders. Under the leadership of Wang Hai and a senior staff that represented a new emphasis on aviation and technical experience, the PLAAF continued to pursue a reform agenda that included more than pro forma changes.

Personnel

Three PLA-wide structural changes broadly affected the personnel structure of the air force after 1985. These were the CMC's mandated reduction of personnel by one million persons beginning in 1985; the introduction of a military civil service system in August 1988; and the reinstitution of military ranks in October 1988.

* By late 1989 the PLAAF reduced its total active duty force by one-fourth.⁸¹ Any reduction in forces is complex. The "salami slicing" technique can emasculate operational units especially if they are already "lean." Common alternatives include reducing administrative and support staffs and eliminating non-essential missions. The PLAAF decided to eliminate organizational "fat" and non-essential levels of administration. Additionally, it transferred some missions to ground force units.

Some solutions represented responses to unique Chinese conditions. Most important was the strategic policy decision to abandon the imminent war doctrine for one of "extended peace."⁸² In effect, the political leadership radically restated the threat assessment which had two important consequences. First, program and manpower directors were effectively allowed to propose cuts in the operational force structure. Second, the demise of the imminent war

doctrine opened the door for new defense strategies as alternatives to People's War. Although the Chinese debate has not ended regarding a new defense strategy, the beginning of a shift nonetheless allowed force planners to look at new ways to organize the PLA.

Some of the largest reductions were realized by a personnel slight of hand. For the first time the Chinese armed forces created a civilian support bureaucracy. Large numbers of officers from the support units--especially schools, academies, hospitals, research institutes and service units--were required to become civilian defense employees (wenzhiyuan). An implicit objective was to raise the ratio of officers to conscripts from 1:2.4 to 1:3.3. For the PLAAF the greatest impact was felt in the logistics department which controlled most support organizations. At HqAF approximately 20 percent of its personnel became civil servants. Most instructors in the air force schools and academies also became civilians. The change provoked concerns about the emergence of a "second class" corps of officers. Apologists for the change stressed that it gave these officers stability and opportunities that otherwise were often unavailable due to operational military requirements. One clear advantage for officers who became civil servants was that they were not subject to the mandatory retirement ages for military officers. For example, a military officer serving at a research institute who is not promoted beyond the AEP of regiment commander by age 45 must retire and leave the institute. As a civil servant, however, he does not have to retire and may therefore retain his post. Most significantly, the change resulted in at least the appearance of a smaller uniformed PLAAF.

The new rank system was both welcomed and feared. After more than 20 years without ranks, it was difficult to establish criteria that took into account seniority, different job responsibilities, and rational organizational structures. Within the air force, rank determinations were easiest to make in operational units. Problems arose, however, when assigning appropriate ranks to people working in technical, administration and political fields. Consistency among the military services was an additional concern. The solution in part was to create a dual-track officer corps: command (i.e., line officers or "operators") and technical personnel (jishuyuan) in support positions.⁸³ The number of uniformed PLAAF personnel has been reduced on paper, but the total number of air force people (military and civilian) has not changed dramatically. Even reductions resulting from retirement still represent a financial cost for the PLAAF which, in turn, has reduced the desired cost-savings.⁸⁴

AAA and SAMs

The PLAAF made significant changes in some operational units. For example, the air force began to restructure its AAA and SAM forces by abolishing the division (shi) level and turning over most of its lower caliber AAA units (i.e., 37mm and 57mm) to PLA ground forces. Of the AAA forces still under PLAAF control, the air force has linked many of them with SAM regiments to form "combined brigades" (huncheng lu). The air force has eliminated the regiment level completely within the combined brigades thereby effecting a direct chain of command between brigades and the battalion. Each combined brigade has five to six battalions consisting of two to three AAA and two to three SAM battalions. As of late

1990, the Jinan MRAF was the only MRAF without any announced combined brigades. Changes in these ground air defense units were not complete in early 1991. There are, however, exceptions to the rule. For example, some SAM brigades have been formed without any AAA battalions. Still other SAM and AAA regiments have not been combined into brigades. Some AAA units that have not been combined with SAM regiments or turned over to PLA ground forces may possibly be used for deployment purposes.

Joint Operations

A dominant objective of regularization throughout the PLA has been a greater emphasis on the development of combined and joint forces. This emphasis was more a result of the lessons learned from the 1979 border conflict with Vietnam than inspiration born of the CCP's stress on reforms. By 1986 the PLA began referring to the military regions as war or campaign zones. The PLAAF provided a written doctrine in 1982 regarding the air force's support role during group army (jituajun) defensive campaigns.⁸⁵ Under this concept, the CMC and PLAAF are responsible for establishing a unified and comprehensive air defense plan for China's strategic points.

At the military region level, the MR commander or Front Army (fangmian jun) commander, who exercises unified control, is responsible for directing group armies and the PLAAF to prepare a Coordinated Action Plan. A group army and assigned PLAAF units establish an operations team (zuozhan xiaozu) that coordinates requests for aerial support. At the lowest levels are target control teams (mubiao yindao zu)--much like ground-based forward air controllers--who control air attacks in conjunctions with ground force divisions. It logically followed in 1987 that MRAF commanders also became MR deputy commanders.⁸⁶

The PLAAF still did not have a strategic air defense policy by late 1988. Additionally, regulations about army-wide airlift support and practices were not introduced until mid-1989. Finally, during late 1988, the PLAAF's SAM and AAA Applied Research Center addressed the need for a policy or doctrine about air defense strategy.

Training

In response to these new operational concepts, the senior PLAAF leadership joined other services in placing a greater emphasis on officer training and education which the Chinese called "knowledgefication" (zhishihua). Qualitative improvements were introduced for academic education, flight training, and joint exercise training. Academic excellence was stressed in the PLAAF as it was throughout the military. Apart from technical competence, one secondary objective was to build esprit de corps and pride. To support this objective the PLAAF closed some schools to consolidate resources and upgraded many schools to academies. The air force was thereby able to begin awarding college degrees at many of the academies. For the first time new pilots were expected to graduate from PLAAF academies

with college degrees. Seven PLAAF academies also began in 1985 to confer masters degrees in technical fields.⁸⁷

Important changes were introduced for pilot training. Fighter and ground attack pilot training was traditionally a three-phase process: basic flight school (20 months), flying academy (28 months), and operational unit training (4-5 years).⁸⁸ Beginning in 1986, the PLAAF began to experiment with an additional fourth phase. For graduates of fighter and ground attack flying programs, phase three became a one-year aircraft "conversion program" at newly organized "transition training bases." Phase four, or proficiency development, became a slightly truncated version of the old operational training in units (now three to four years). The program was formalized in July 1988 when the CMC authorized each MRAF to establish a transition training base. The goal is to eventually eliminate the need for operational fighter divisions to dedicate one of the three regiments to training.⁸⁹ This measure also fosters greater standardization of advanced flying skills. Regularization of flight training allowed the PLAAF to further abolish three flight training schools after July 1986.

The increasing emphasis on joint and combined operations led to additional training changes. One initiative was the creation of greater combat reality in flight training. Since 1982 each MRAF has formed one to three "blue force units" (lanjun fendui) that serve as enemy or aggressor squadrons. The PLAAF Flight Test and Training Center, located in Cangzhou, Hebei province, also formed a blue force unit to fly as enemy aircraft during air defense exercises.

PLAAF histories often refer retrospectively to "mixed" or "combined" military actions even in the 1950s. In reality it is doubtful that joint or combined operations were ever raised to a doctrinal or conceptual level until perhaps the early 1980s. Combined arms training for the PLA more often than not involves combining the arms (bingzhong) within a service (junzhong). In the case of the air force, each of the seven MRAFs has begun since 1985 to establish a tactical training area. These training areas are specifically designed for the five PLAAF branches to train together. In 1986 the different services also addressed joint training (i.e., involving different services [junzhong]). Some MRAFs and Air Corps formed joint tactical training areas in conjunction with military region ground forces.

Esprit de Corps

Along with the other services, the PLAAF sought to rebuild pride and--to use a common Western military term--professionalism. These measures were an extension of regularization. In many ways the PLA had become organizationally and behaviorally irregular since the beginning of the Cultural Revolution. Several actions were initiated. First, the education of officers was substantially upgraded. A college degree or equivalent became a requirement for promotion. More important was the fact that the PLAAF would provide much of this education. Additionally, a college degree provided social status.⁹⁰ Second, advanced education for masters and doctoral degrees provided further opportunities to attain distinction. Third, the reintroduction of ranks provided easily discernible status, achievement

and responsibility. Fourth, the creation of stylish new uniforms with service insignia went far in portraying service members as competent and polished specialists rather than rural rustics. Fifth, professional communication was reestablished through aviation journals, publications and books.

Finally, a special step was taken to foster pride among PLAAF pilots and aircrews. The airforce began awarding one of four aeronautical ratings to all aircraft crew members in 1986.⁹¹ Among the PLAAF's 10,000 pilots, only seven percent received the highest or "special grade" award. Given the PLAAF's force structure, it was not surprising that 15-20 percent of the fighter pilots won the "special grade" rating. According to one senior air force official, it takes about four to five years of flying experience at an operational unit for a pilot to simply become proficient.⁹²

POLITICAL COMMISSAR SYSTEM

The PLA's political commissar system has always been a puzzling institution to foreigners. Chinese analysis of the functions of CCP organizations within the PLA are also far from clear. Recent PLA publications, for example, do little to clarify the relationships among the "party committee system" (dangwei zhidu) within the PLA, the "system of division of leadership responsibility" (shouzhang fengong fuze zhidu) within the PLA, and the political commissar system (zhengzhi weiyuan zhidu).⁹³ Foreign analysis often refers to the entire political structure within the PLA as the political commissar system. In theory, there is only one "party system" within the PLA. In practice there appears to be considerable redundancy which, in turn, leads to Chinese references to different systems.

The "commissar system" exists at the regiment level and above. The evolution of nomenclature indicates that it is explicitly intended to be an instrument of party control over the military. The party committee system is actually a membership infrastructure. Thus even though there could be considerable atrophy of party organizational life within the PLA--especially below the regiment level--the commissar system could continue to flourish. The two systems ostensibly converge when political commissars lead local party committees as well as provide political oversight.⁹⁴

During the earliest professional exchanges between USAF and PLAAF delegations, both sides grappled awkwardly with the existence or absence of this "system" in the other's service. Western analysts tend to regard it as a Leninist artifact that is intrusive and obstructs the pursuit of military efficiency. The attitudes of PLA officers are opaque. One military official metaphorically described the system as follows: "Every child needs a mother and a father to grow up correctly. Within the Chinese military, the commander is like the father, the political commissar is like the mother, and the soldiers are like the children."⁹⁵

During the 1980s some party reformists argued strongly for a clearer separation of party policy functions and the routine operations of organizations (e.g., factories, government offices, schools, local governments). The proposal spilled over into the military.

Conservative critics alleged that "foreign militaries" under the guise of "peaceful evolution" tried inappropriately to influence PLA officers regarding the separation of army and party.⁹⁶ Apart from the allegation of foreign influence directed at the PLA, the military's political commissar system has always been a sensitive subject.

PLA officers were generally willing to respond to questions about military matters, but the army's commissar system regularly appears to remain a "forbidden zone." When talking about this topic with the authors, PLA officers were consistently circumspect in their comments. The intensity and breadth of their feelings were never clearly revealed. Generally speaking, however, several "mainstream" attitudes were deducible. First, officers--they concurrently were party members--seem to want to be seen as apolitical but ardently patriotic. Second, they are keenly attuned to and philosophically uncritical of policy. It is important to them to know what the correct policy position is. In American parlance they are "good soldiers who will do what they are told" and regard "those issues [i.e., policy matters] as being well above their pay-grades." Third, because political policymaking is not within their spheres of responsibility, they do not seem to be outwardly concerned about how policy is made in the highest realms of politics. Finally, among officers there does not seem to be an uneasiness about the party-military relationship. There is, however, a muted feeling that political oversight of routine personnel actions is unnecessary.⁹⁷ What appears to outsiders as needless redundancy in the political apparatus, may in fact be a source of irritation within the PLA.

Senior military officials stated on several occasions that developing a sense of patriotism among airmen was a primary objective of the political commissar system. These leaders asked American officers how patriotism is taught in the U.S. military. Further discussions indicated that PLA and PLAAF leaders feel they are coping with an underdeveloped sense of patriotism. At the heart of the problem, some officers said, is the parochial isolation of new conscripts and cadets: they are proud to be Chinese but have difficulty identifying with the larger, abstract concept of the Chinese state and national objectives.

Apart from the strictly political dimension of the commissar system, it nonetheless is responsible for a variety of services that are almost nonpolitical in nature. These services include routine personnel administration, education, security, information dissemination, welfare and recreation activities, sponsoring cultural events, counseling soldiers and dependents with problems, and maintaining the general morale of soldiers. In foreign militaries many of these missions fall within the purview of personnel affairs or a chaplin's office.

Six percent of the PLAAF--about 30,000 people--work within the commissar or military political system. Given the relatively small number of PLAAF personnel working at the MRAF level or above, it is clear that most of the air force's full-time political workers are in operational units and support organizations. Organizationally, the party component consists primarily of party committees and branches which are led by party secretaries. Party

committees and their standing committees, which handle day-to-day affairs, exist at the regiment level and above. The "grassroots level," as it is called, is found in organizations below the regiment level. On the military side, the party operates through the political departments which are administrative organizations. At the regiment level and above there is a political commissar who is a counterpart to the commander. There are "political instructors" at the grassroots levels who interact with servicemen--party and nonparty members. Virtually every new air force political officer receives training at the PLAAF Political Academy (Shanghai). Political commissars receive mid-level training at the Air Force Command College (Beijing).

At each level of the air force major issues are decided by the party committee although there is a division of responsibilities. If an issue concerns military affairs, the commander or line military officer carries out the decision. If the issue concerns political matters, political officers are responsible. For example, a commander decides how many sorties will be flown on a given day, but the political commissar participates in deciding who flies those sorties because that decision involves both military and political matters (i.e., reliability, attitude).²⁸ In a commander's absence, the political commissar is responsible for carrying out the unit's mission in conjunction with the deputy commanders. In theory, a commander and political commissar are coequal; in practice the relationship may be quite variable. Personality and leadership style play an important role that is largely invisible to foreigners who try to understand the meld of commander and commissar.

An important consequence of the PLA's policy of "opening up to the outside" is that even the political commissars have been directly exposed to foreign cultures and military systems. In October 1988, for example, the director of HqAF's Political Department, Major General Ding Wenchang, accompanied the director of the PLA General Political Department, General Yang Baibing, on a visit to Eastern Europe. Soon thereafter the PLAAF Political Commissar, Lieutenant General Zhu Guang, visited the United States as a guest of the Secretary of the Air Force.

WEAPONS PROCUREMENT AND MODERNIZATION

* Since the founding of the PLAAF in 1949, its leadership has continually pursued two main objectives: regularization and modernization. As argued earlier in this analysis, regularization is mainly an internal PLAAF task, but it is substantially complicated by social, economic and political forces outside the air force. Force modernization, conversely, is largely an external problem. Since the early 1960s, the PLAAF has had to rely solely on what China's civilian defense aviation industry could research, develop and manufacture. For many years a senior PLAAF officer was concurrently a deputy minister of the aviation industry. During the Cultural Revolution the air force interfered quite directly in aviation research and manufacturing. For more than two decades there has been an expectation inside--and sometimes outside--China that its aviation industry had matured to the point that it could serially produce modern, Chinese-designed aircraft. Even in 1968, when Richard M. Bueschel drew attention to "the problem of creeping obsolescence" in Communist Chinese Air Power,

he added that "there are signs that this cancer has been blocked and that the PLAAF has turned the corner toward a modern air arm."⁹⁹ The PLAAF has muted its public disappointment about the unfulfilled expectations.¹⁰⁰

When Wang Hai became PLAAF commander in 1985, the aviation industry still had not solved its aircraft development problems. Virtually every aircraft in the inventory was still based on 1950s Soviet technology. There were no mobile SAMs and--more importantly--no new weapon systems were ready for deployment in the near future.¹⁰¹ Equally important, virtually all of China's neighbors were upgrading their forces with the latest Soviet or Western equipment. The PLAAF was impatient. The aviation industry, in turn, attributed a fair portion of the blame to air force meddling during the late 1960s and early 1970s. Following the Soviet cessation of technical assistance in 1960, the Chinese aviation industry proceeded along two tracks. First, it copied and modified various Soviet aircraft, such as the MIG-19 and MIG-21 fighters, the TU-16 bomber, and the MI-4 helicopter.¹⁰² Second, it began indigenously developing aircraft, such as the A-5 ground attack aircraft and F-12 light interceptor at Nanchang, the F-8 interceptor at Shenyang, and the F-9 interceptor at Chengdu.¹⁰³ The Cultural Revolution seriously impeded the progress of these and other programs. For example, quality control measures for the F-6-3, Zhi-5 helicopter, and A-5 completely broke down during their development. Numerous quality control problems forced the CMC to order factory recalls for all of these aircraft in November 1975.¹⁰⁴ Even in the early 1980s, PLAAF A-5, F-6 and F-7 aircraft continued to have serious problems with hydraulic system contamination. This problem alone contributed to an average of 30-40 percent of all aircraft malfunctions. It was as high as 70 percent in one F-7 unit.¹⁰⁵

The F-8 and Peace Pearl

The Shenyang Aircraft Corporation's F-8 and F-8II interceptor development programs were among China's most ambitious. The F-8, whose development lasted from 1964 to 1979, was first flight tested in June 1969. Although the PLAAF began deploying the F-8 in the early-1980s, it was unsatisfied with the aircraft. Therefore, in 1980 the PLAAF established requirements to modify the F-8 as the F-8II. The requirements which were given to the Ministry of Aviation Industry emphasized two primary needs: a new fire control system--including a larger radar antenna for an increased search and track capability--and a more powerful engine. The first F-8II prototype flew in June 1984; design flight testing was completed in October 1987.¹⁰⁶

China's aviation industry was still unable to fully satisfy the PLAAF's requirements. What ensued was a remarkable breakthrough in cooperation involving the United States government, the PLAAF and the Chinese Ministry of Aviation Industry. After long negotiations the parties concluded a foreign military sales agreement to upgrade the F-8II's fire control system.¹⁰⁷ Following the June 1989 events in Tiananmen Square, the United States suspended arms sales to China. Chinese technicians were allowed to resume work on

the program a few months later, but Beijing decided in May 1990 not to proceed beyond the development stage.¹⁰⁸

Chinese aviation industry officials have continued development of their F-8II variant with a new domestic fire control system. PLAAF and PLA naval aviation maintenance personnel conducted three month's training on the F-8II at the Shenyang Aircraft Corporation from April to June 1990. The visit of CCP General Secretary Jiang Zemin to the F-8II production facility in late October 1990 virtually confirms that the aircraft is destined to become part of the navy and air force inventories in the near future.¹⁰⁹

The PLAAF thus continues to struggle with one of its two longstanding problems: aircraft modernization. The solutions are not simple. China's aviation industry is determined to establish its own production base by acquiring foreign technology. This will be a long-term process. There is a lack of hard currency to purchase large numbers of foreign-made military aircraft.¹¹⁰ Even if the currency were available to the PLAAF, this course of action is opposed by China's aviation industry. Additionally, domestic critics in China stress the dangers of dependence on foreign suppliers for defense equipment--a concern that is expressed in many Western nations as well. The events of June 1989, which further complicated or halted the flow of Western technology to China, lent support to the dependency critics. Finally, radical changes in the Soviet Union's military posture vis-a-vis Europe, the United States, Japan and China have eliminated many of the threat justifications for large investments in new high technology aircraft.

There are frequent rumors that China's aviation industry is developing new fighter aircraft.¹¹¹ It is unlikely, however, that any of these aircraft can be ready for deployment during the 1990s: the development time for new aircraft is simply too long.¹¹² There also is frequent speculation that China may turn back to the Soviet Union for aviation industry assistance. In July 1990, CMC Vice-Chairman Liu Huaqing led a delegation to Moscow to discuss the possible purchase of MIG-29 interceptors and SU-27 light bombers. The delegation, which included Minister Lin Zongtang of the Ministry of Aero-Space Industry (MAS), visited a MIG-29 production facility. In early 1991 there was further speculation that the Chinese were discussing detailed terms for 24 SU-27s.¹¹³ There are compelling reasons why the Chinese and Soviets might reach some agreement. Such an agreement, however, would have little to do with threats, politics or socialist friendship. Both sides are looking for bargains in an international market where foreign sales--equipment or technology--may be the only way to rescue some defense industries. MAS faces the same problem with the Soviets that it does in the West: aircraft manufacturers do not want to sell technology that will create a new competitor. Meanwhile, the Chinese have reportedly equipped four of its combat aircraft for the first time with air refuelling kits purchased from Iran, but is still looking for a suitable tanker.¹¹⁴ It is not clear, however, what kind of aircraft were equipped, whether it is a Ministry of Aerospace, PLAAF, or Naval Aviation program, or whether the aircraft were new production models or modified existing aircraft.

LEADERSHIP IN THE 1990S

The PLAAF has had five commanders and eight political commissars since 1949. General Wang Hai, the present commander, and Lieutenant General Zhu Guang, the political commissar, assumed their positions together in July 1985. They have further promoted the regularization process that began with Zhang Tingfa. Foreign observers who have been close to the PLAAF have given high marks to the cooperative spirit of the Wang Hai-Zhu Guang team. Although there was considerable political soul-searching within China's military after June 1989, the senior leadership of the PLAAF seems to have weathered it well. One reason is that the air force leadership concentrated on the tasks assigned by the CMC and found little time to become involved in the controversial aspects of reform.

PLAAF leadership changes have become more stable and predictable. There have been no surprises since June 1989. There is considerable reason to conclude that Wang Hai and Zhu Guang have been successful in mapping out a long-term plan for a regularized leadership transition for the next generation of senior--but younger--air force leaders. The CMC and three PLA general departments approve all senior level PLAAF personnel changes, but none of the changes that were anticipated in early 1989 were altered after June 1989. In other words, despite the upsurge in political themes and rhetoric by the PLA General Political Department, the regularization of the PLAAF promotion process has led to stability.

Leadership stability has been easier to predict because a number of career and experience indicators have become evident. First, future PLAAF commanders are henceforth likely to be aviators; non-aviators will be the exception. General Wang Hai is the first commander to have been a pilot and the only one who did not begin his career in the ground forces.

Second, antecedent assignments for the air force commander and deputy commanders will be jobs as an MRAF deputy commander and commander. Wang Hai had been the Guangzhou MRAF commander and PLAAF deputy commander. Career progression to political commissar position may involve variations. Zhu Guang, whose previous air force command experience was as the Shenyang MRAF deputy political commissar, came directly to HqAF from jobs in the General Political Department and CMC.

Third, Korean war experience will be important in the near-term but transitory. Three of the current HqAF deputy commanders, three of the seven MRAF commanders, and at least two MRAF deputy commanders in 1989 flew with Wang Hai during the Korean War.¹¹⁵

Fourth, Wang Hai and Zhu Guang have moved younger officers into key HqAF and MRAF command positions. The reinstitution of ranks in October 1988 made this task easier since retirement ages were linked to the AEPs. It became possible, for example, to put talented younger officers in command positions with lower ranks than an older deputy because the AEP was the real reflection of responsibility.¹¹⁶ Overall, the new officers are

better educated than their predecessors. Many of them have been given the opportunity to travel abroad with Wang Hai or other PLAAF and PLA delegations.

Wang Hai's heir apparent is PLAAF deputy commander Lieutenant General Yu Zhenwu. Although Yu is the youngest deputy, he is first in the protocol order among the four deputy commanders. He also is an alternate member of the 13th Party Congress Central Committee. Yu, who has a strong background in research and development, training and command, has traveled to several countries. Yu initially made his mark in the air force when he conducted the first flight in 1958 of China's indigenously-developed (but never produced) FT-1 trainer. From his position as director of HqAF's Training Department, he replaced Wang Hai as the Guangzhou MRAF commander in 1982. When Wang Hai became PLAAF commander in 1985, Yu transferred to Beijing to become a deputy commander.

The most likely prospects to become the next deputy commanders are four post-Korean War airmen who are currently MRAF commanders: Lieutenant Generals Cao Shuangming (Shenyang), Jiang Yutian (Nanjing), Lin Jigui (Jinan) and Liu Heqiao (Guangzhou). The first three are also members of the 11th National People's Congress. They are all young, respected pilots within the air force and have been deputy MRAF commanders.

Even younger PLAAF officers are already being prepared to assume command responsibility in the out-years. One of them is Lieutenant General Peng Gongge. He is the commander of the 7th Air Corps in Nanning and an alternate member of the 13th Party Congress (along with Yu Zhenwu). Peng followed Yu Zhenwu as director of HqAF's Training Department. He also accompanied Wang Hai, Cao Shuangming and Jiang Yutian to the United States in 1986.

CONCLUSION

The history of the PLAAF is marked by recurrent efforts to regularize its personnel, procedures, regulations, missions and institutions as well as continuous efforts to acquire modern aircraft and weapons. Modernization has involved civilian industrial technologies whose acquisition and implementation are fundamentally beyond the control of the air force. Regularization has involved internal processes over which the air force has exercised some control. The withdrawal of Soviet assistance, a succession of disruptive political policies and struggles, and a defense strategy that did not encourage the development of air power doctrine left the PLAAF short of its own standards of a regularized military service. Similar but industrially more complex factors have stymied the efforts of Chinese aviation industry engineers to develop and manufacture modern equipment. As the PLAAF looks toward the year 2000 and surveys the modern aircraft and related weapons possessed by Japan, the two Koreas, Taiwan, Vietnam, Thailand and India, there is bound to be mounting frustration. The most disturbing question for the air force is how long can regularization be meaningfully sustained without modernized equipment? Some Chinese writers argue that quality training

can "make up for the lack of modernity of our weaponry." It is doubtful this view is totally accepted in the PLAAF.¹¹⁷

It would be misleading to conclude that various efforts to regularize the air force were failures. There were indeed incremental improvements and changes. If there is a persistent lesson in Western defense reform literature, it is that incremental changes are about all any organization can realistically expect. What is most incomprehensible to foreign analysts, however, is the extent to which Chinese political struggles and issues, which were largely unrelated to the air force, have been able to so thoroughly disrupt and erode prior achievements.

What is significant about China's recent decade of reform--particularly the pursuit of military regularization after 1985--has been the breadth and depth of initiatives. The extent to which the PLAAF was able to implement many of its reforms has been impressive. It would be difficult to find military reforms of similar scope in most Western nations.

The 1980's resurgence of Western analytical interest in PLA professionalism may have overlooked the relevance of regularization to professionalism. The debate about professionalism invariably has hinged on the political roles of the PLA. It is commonly argued that a politicized army cannot be a professional army. This study of PLAAF regularization and reforms concludes that China's air force has indeed become a professional military service. As argued earlier, it is not a foreign label the PLAAF necessarily welcomes. But the fact remains, regularization of the PLAAF has led to recognizable standards of professionalism.¹¹⁸

PLAAF regularization and reform have contributed to the development of professionalism in at least three important ways. First, a sense of air force corporateness has been fostered through the reestablishment of PLAAF organizations; the compilation of rules, regulations and directives; a rationalization of the manpower structure through retirement directives; the introduction of ranks; the creation of a corps of civil servants; the establishment of a NCO corps; the clarification of regular promotion paths within the organizational hierarchy; and the articulation of air force mission statements. Second, various measures have also contributed to the development of a set of ethics or values. The PLAAF has embraced the spectrum of values found in the often cited corpus of military values--"the PLA's fine traditions." Additionally, the clarification of rules and regulations has sharpened a sense of what is expected of air force personnel. A renewed concentration on defining air power doctrine and missions has compelled airmen to think more consciously about what the air force contributes relative to national defense strategy. Finally--and perhaps most convincingly--regularization has pointedly drawn attention to job skills, education and training. PLAAF schools have been reopened and upgraded. New training methods have been developed as well as specialized "joint" training bases which reflect the changes in military strategy.

What remains to be seen is whether or not China has successfully moved beyond the enervating political and social disruptions which in times past not only arrested the processes of regularization but actually resulted in atrophy. The political shocks resulting from the June 1989 disturbances initially portended a recurrence of politically induced oscillations. A year later, however, the PLAAF does not seem to have departed perceptibly from its intended course of regularization. The vitality of regularization may depend more on the outcome of the festering issue of equipment modernization than party discomfort with professionally oriented commanders.

ENDNOTES

1. See Xinhua News Agency Domestic Materials Office, ed., Shi Nian Gaige Dashiji (1978-1987) [Chronicle of the Ten Years of Reform (1978-1987)] (Beijing: Xinhua Press, November 1988); State Economic System Reform Commission, ed., Zhongguo Jingji Tizhi Gaige Shi Nian [Ten Years of Economic Reform for China] (Beijing: Economic Management Press and Reform Press, 1988).
2. When reforms in general encountered more criticism in the late 1980s, military leaders and the media began to change the word order to "revolutionization, modernization and regularization." Deng Xiaoping's original wording in a speech to the Central Military Commission on September 19, 1981, was a "powerful, modern and regular revolutionary army." Not only was the order reversed, but parallel construction was introduced in the phrase to create a symmetrical slogan. The ascendancy of "revolutionization" came later as a political gambit. See "Major Achievement in Army Building over the Past 8 Years," Banyuetan [Semimonthly Talks] (Beijing), 14 (July 25, 1987), pp. 4-7, in Foreign Broadcast Information Service (hereafter cited as FBIS), Daily Report: People's Republic of China (Washington, D.C.: U.S. Government Printing Office), August 14, 1987, pp. K2-3; Chen Xianhua, "Follow Laws Governing the Running of Armed Forces, Give Regular Guidance," Jiefangjun Bao [Liberation Army Daily] (Beijing), March 30, 1990, p. 3, in FBIS-CHI-90-077, April 20, 1990, pp. 39-41.
3. A rare reference to "modernized soldiers" is found in Pan Shiying, "Have a Sober Understanding of the Principal Contradictions in Army Building," Jiefangjun Bao, September 11, 1987, p. 3, in FBIS-CHI-87-185, September 24, 1987, p. 21.
4. Contacts between the PLA and foreign civilian national security scholars have not been extensive. In part this stems from the fact that China's community of national security scholars consists mainly of uniformed "defense intellectuals." It comes as no surprise, therefore, that foreign military attaches have sometimes enjoyed a professional access that normally is unavailable to civilians researchers. This situation began to change with the establishment of civilian think tanks and the "opening up" of the PLA's National Defense University, the Academy of Military Sciences and the Commission on Science, Technology and Industry for National Defense (COSTIND). Scholars such as Paul H. B. Godwin and

Jonathan Pollack have enjoyed considerable contacts. Professional access or at least professional interest in Chinese military affairs has resulted in a number of books and articles by former U.S. military attaches who served in Beijing and Hong Kong. See R. Mark Bean [air attache, Beijing], Cooperative Security in Northeast Asia: A China-Japan-South Korea Coalition Approach (Washington, D.C.: National Defense University Press, 1990); Monte Bullard [army attache, Beijing and Hong Kong], China's Political-Military Evolution (Boulder, Colorado: Westview Press, 1985); Monte R. Bullard and Edward C. O'Dowd [assistant army attache, Hong Kong], "Defining the Role of the PLA in the Post-Mao Era," Asian Survey 26:6 (June 1986), pp. 706-720; Joseph P. Gallagher [assistant army attache, Beijing], "China's Military Industrial Complex: Its Approach to the Acquisition of Modern Military Technology," Asian Survey, 27:9 (September 1987), pp. 991-1002; Richard Gillespie E. [army attache, Hong Kong] and J. C. Sims, "The General Rear Services Department," in William W. Whitson, ed., The Military and Political Power in China in the 1970s (New York and Washington: Praeger, 1972), pp. 185-213; Richard J. Latham [air attache, Hong Kong], Selected Bibliography of PRC National Defense Literature, 1980-1991, forthcoming; Chinese National Security: Challenges and Stress in the Decade of Reform, forthcoming, National Defense University Press; "The Implications of Military Industrialization in the PRC," in James E. Katz, ed., Sowing the Serpents' Teeth: The Implications of Third World Military Industrialization (Lexington: Lexington Books, 1985); Alfred D. Wilhelm, Jr. [army attache, Beijing], U. Alexis Johnson and George R. Packard, eds., China Policy for the Next Decade (Boston: Oelgeschlager, Gunn & Hain, Publishers, Inc., 1984); Eden Y. Woon [assistant air attache, Beijing], "Chinese Arms Sales and U.S.-China Military Relations," Asian Survey 29:6 (June 1989), pp. 601-618; and Larry M. Wortzel [assistant army attache, Beijing], ed., China's Military Modernization (New York: Greenwood Press, 1988).

5. See Richard M. Bueschel, Communist Chinese Air Power (New York: Frederick A. Praeger, 1968) and A. James Gregor, "Modernization of the Air Force of the PRC and the Military Balance in the Taiwan Strait," Issues & Studies 21:10 (October 1985), pp. 58-74. Bueschel devotes more than half the book to PLAAF aircraft. The first section, which fundamentally is a public account of PLAAF activities, used less than five PRC sources. The point is not that Bueschel failed to use original sources--there simply were no published Chinese sources. Gregor's brief article is not intended to go beyond an order of battle comparison of PRC and Taiwan air forces. Much of the writing about the PLAAF has tended, however, to focus on the "bean counts" in lieu of other sources of information and process and policy.

6. Dangdai Zhongguo Kongjun [China Today: Air Force], by the "China Today" Series editorial committee (Beijing: China Social Sciences Press, 1989), hereafter cited as DZK; Kongjun Shi [History of the Air Force], by the PLAAF Headquarters Education and Research Office (Beijing: PLA Press, November 1989).

7. The trend toward greater openness resulted in the unrestricted publication of some technical PLAAF journals such as Hangkong Weixiu [Aviation Maintenance] which is published by the PLAAF Aeronautical Engineering Department. The PLAAF's most widely circulated publication, Zhongguo Kongjun [Air Force of China], began publication in April

1986. Although it was not a neibu publication, it was unavailable to the Chinese public until 1988. Ironically, the cover title of the journal's first number was printed in Chinese and English. Probable antecedents were Renmin Kongjun [People's Air Force] which began publication in April 1950. In 1958 the name was changed to Kongjun Bao [Air Force Daily]. Hangkong Zazhi [Aviation Magazine] began publication in April 1955. Publication apparently ceased during the Cultural Revolution. DZK, pp. 652, 658, 660 and 675.

8. See Richard J. Latham, Selected Bibliography of PRC National Defense Literature, 1980-1991, forthcoming.

9. Paul H. B. Godwin, The Chinese Communist Armed Forces (Maxwell Air Force Base, Alabama: Air University Press, June 1988) and The Chinese Defense Establishment: Continuity and Change in the 1980s (Boulder, Colorado: Westview Press, 1983); Ellis Joffe, The Chinese Army After Mao (Cambridge, Massachusetts: Harvard University Press, 1987); Ngok Lee, China's Defence Modernisation and Military Leadership (Sydney: Australian National University Press, 1989); Lonnie D. Henley, "China's Military Modernization: A Ten Year Assessment," in Larry M. Wortzel, ed., China's Military Modernization (New York: Greenwood Press, 1988), pp. 97-118.

10. Pan Shiyiing, p. 20.

11. Chen Xianhua, p. 40.

12. Lin Chong-pin, "The Extramilitary Roles of the People's Liberation Army in Modernization: Limits of Professionalization," draft paper, American Enterprise Institute, Washington, D.C., 1990; Paul H. B. Godwin, "A Praetorian PLA: Party-Military Relations in China After Tiananmen," draft paper, National Defense University, Washington, D. C., July 1990; Richard J. Latham, "China's Party-Army Relations After June 1989: A Case for Miles' Law?" draft paper, National Defense University, Washington, D.C., April 1990.

13. Samuel P. Huntington, The Soldier and the State (Cambridge, Mass.: Harvard University Press, 1957); Bengt Abrahamsson, Military Professionalization and Political Power (Beverly Hills, CA: Sage Publications, 1972); Dale R. Herspring and Ivan Volgyes, eds., Civil-Military Relations in Communist Systems (Boulder, CO: Westview Press, 1978); Claude E. Welch, Jr., ed., Civilian Control of the Military (Albany, NY: State University of New York Press, 1976); Morris Janowitz, The Professional Soldier (New York: The Free Press, 1971); Morris Janowitz and Jacques Van Doorn, eds., On Military Ideology (Rotterdam: Rotterdam University Press, 1971); Eric A. Nordlinger, Soldiers in Politics: Military Coups and Governments (Englewood Cliffs, NJ: Prentice-Hall, 1977); Amos Perlmutter, The Military and Politics in Modern Times (New Haven, CT: Yale University Press, 1977); Catherine McArdle Kelleher, ed., Political-Military Systems: Comparative Perspectives (Beverly Hills, CA: Sage Publications, 1974); Michel Louis Martin and Ellen Stern McCrate, eds., The Military, Militarism, and the Polity (New York: The Free Press, 1984); Amos Perlmutter and Valerie Plave Bennett, eds., The Political Influence of the Military: A Comparative Reader (New

Haven, CT: Yale University Press, 1980); Talukder Maniruzzaman, Military Withdrawal from Politics: A Comparative Study (Cambridge, Mass.: Ballinger Publishing Company, 1987).

14. The western critique of military professionalism generally regards corporateness as a positive attribute. Chinese national security literature is almost totally devoid of any references to military professionalism (i.e., zhiye [profession] as opposed to zhuanye [specifalty]). In part this is because the western criteria effectively deny there is professionalism in the PLA because of the comingling of political and military missions. Second, and least often cited, is the fact that "corporateness" is endemic in Chinese society. It takes forms such as the danwei (unit) or xitong (system) mentalities and difang (local) tendencies. A great part of the PLA's public service activities are designed to reduce the almost inherent separation between the army and Chinese society. The explicit encouragement of corporateness--or even an academic discussion of military corporateness--runs counter to longstanding CCP, government and military policies. Although military corporateness exists, calling attention to it only invites criticism. There is no evidence, however, that Chinese defense intellectuals are interested in the Western debates about military professionalism. Articles published by spokespersons for the CCP's Organizational Department clearly associate well organized party branches with the development of positive communist values and attitudes. (For a contrary view see Zhou Ruinan, "Organizational Structure Should Not Be Regarded as an Essential Factor of Combat Capability," Jiefangjun Bao, February 23, 1990, p. 3, in FBIS-CHI-90-062-S, March 30, 1990, pp. 14-16.) Well organized military organizations and a clear sense of organizational hierarchy also contribute to esprit de corps and a sense of organizational identity. An unanswered question is how extensively do PLA personnel extend to the PLA at large their sense of local, organizational corporateness? The PLA's widespread use of "All-PLA" conferences, meetings and ceremonies underscores the effort to foster the concept of a national military.

15. Knott and Miller, pp. 101-2. In the late nineteenth and early twentieth centuries the "classical reform" model rose to prominence in the west, especially in the United States. Chinese reforms during the 1980s resembled the classical model in terms of objectives and strategies. Chinese reformers will disavow any foreign similarities. Marxism and the unique Maoist additions to social and political reform nonetheless evince the same positive faith in the rational ability of people to rectify irrational structures and dysfunctional procedures.

16. The design, development, research and production of military weapons in China is fundamentally a civilian industrial rather than a military activity. For the PLA, force modernization involves more than procurement funds. Even with an unlimited budget, the PLA can only buy what the defense industrial ministries can manufacture. For several decades PLA force modernization goals have consistently exceeded the capabilities of China's defense industrial sector.

17. DZK, pp. 5-27.

18. Ibid., pp. 37 and 89. The PLAAF repaired or expanded only 94 of the 543 airfields between 1949 and 1953. Most of the dirt runways were simply reclaimed for agricultural use.

19. DZK, pp 18-19. In April 1988, China sent an aviation delegation to Japan to commemorate the contributions of the Japanese airmen. See Hangkong Shibao, November 24, 1988, p. 1.
20. One of the most detailed histories of Chinese aviation in English is found in Malcolm Rosholt, Flight in the China Air Space 1910-1950 (Rosholt, Wisconsin: Rosholt House, 1984).
21. The PLA Air Defense Force (ADF), which was formally established in 1950, became a service equivalent to the air force and navy in 1955. The ADF's anti-aircraft artillery were primarily responsible for the air defense of China's major cities. When the PLAAF and ADF merged in May 1957, the ADF consisted of AAA troops, searchlight troops, aircraft reporting troops, eight schools and 149,000 personnel. DZK, pp. 218-237.
22. There were efforts in the mid to late 1980s to establish an independent, civilian air traffic control administration—the National Air Traffic Control Administration (NATCA). Despite the safety advantages of an integrated national air traffic control system, the PLAAF was unwilling to surrender its broad control of Chinese air space. Similar disagreements existed in the United States between the Federal Aviation Administration (FAA) and the United States Air Force during the early 1950s, but were resolved by 1958.
23. The civil air corridors are quite narrow (eight kilometers). Civilian air traffic controllers must seek permission from the operations centers of the MRAF headquarters to circumvent storms or divert aircraft to unscheduled airfields. See Thomas P. Messier, James Etgen and Edward Harris, "Improving China's Air Traffic Control," The China Business Review, 14:5 (September-October 1987), pp. 26-31.
24. DZK, pp. 99-100, 440-41.
25. The Third Ministry of Machine Industry was renamed the Ministry of Aviation Industry (MAI) during the early economic reforms of the 1980s. The change reflected a shift from primarily producing military aircraft to a market-oriented interest in manufacturing civilian aircraft and products. In 1988, the ministerial headquarters of the MAI and the Ministry of Astronautics (formerly the Seventh Ministry of Machine Industry) were combined to form the Ministry of Aero-Space Industry (MAS).
26. DZK, pp. 67-69, 76-78.
27. Wu Faxian (1965-1971) succeeded Liu Yalou (1949-1965) as PLAAF commander. During Liu's tenure, Wu was a political commissar. The next PLAAF commander was Ma Ning (1973-1977) who had an illustrious army career before transferring to the PLAAF in 1949. He served in the 21st air division (Shanghai) until 1967 when, as the division commander, he transferred to Changchun in the Shenyang MR. He was apparently politically adroit during the Cultural Revolution. In 1968 he was on the Jilin Provincial Revolutionary Committee standing committee. Ma Ning later served as the Lanzhou MRAF deputy commander prior to becoming the PLAAF commander. Ma's political savvy allowed him to

become PLAAF commander before Zhang Tingfa who had been a deputy commander before the Cultural Revolution. Zhang, who subsequently followed Ma Ning as commander, had the most diversified headquarters experience of any PLAAF commanders. Zhang served as the PLAAF commander (1977-1985), political commissar, deputy commander, chief of staff and CCP Politburo member. Wang Hai, the current commander (1985-), is the first pilot to command the air force. Liu Yalou is the only air force commander about whom a book has been written. See Sun Weitao, Liu Yalou Jiangjun Yishi [Anecdotes about General Liu Yalou] (Harbin: Northern Literature and Arts Press, 1985).

28. DZK, p. 47.

29. Ibid.

30. Xiao Hua later served as director of the PLA's General Political Department (1963-1967). He was dismissed by Jiang Qing during the Cultural Revolution.

31. DZK, p. 41. Chang Qiankun attended the Huangpu Military Academy (1925) before going to the Soviet Union the following year to study flying and aeronautical engineering. He served in the military engineering school of the Red Army's 18th jituān. He later published and translated at least five books about aviation and served as the head of the Military Commission's Aviation Bureau before the PLAAF was organized. Wang Bi, the deputy political commissar, also was a student in the Soviet Union where he studied aircraft engines and maintenance. He was the head of the 18th jituān's military engineering school. The first chief of staff, Wang Bingzhang, was from the Second Field Army and had considerable experience as a staff leader. When the PLAAF was established in 1949, Chang became a deputy commander and Wang became a deputy political commissar.

32. Ibid., p. 39.

33. DZK, p. 109.

34. PLAAF commander Liu Yalou used the Taiwan liberation issue to seek the establishment of an air force paratroop (kongjiāng bīng) unit. In July 1950, the CMC established the Air Force-Marines First Brigade in Shanghai and used as its foundation the 89th division (30th army, 9th bīngtuān, Third Field Army). Thereafter the unit's designation changed several times (i.e., air force marine first division, paratroops division, the airborne division). It is now known as the PLAAF 15th Air Army (kóng 15 jūn). DZK, pp. 83 and 235.

35. The Korean conflict looms large as a galvanizing event in PLAAF history. A comparison of USAF and PLAAF accounts of the Korean conflict and air battles over the Taiwan Strait (1958) are informative. According to Kongjun Shi, China shot down 330 aircraft and hit another 95 during the Korean War. Chinese pilots shot down two aircraft, hit one and sustained no losses during the 1958 engagement. According to the same history, the PLAAF downed 110 additional manned and unmanned aircraft over a period of several years. (Kongjun Shi, p. 2). According to USAF data, the Far East Air Force (FEAF) Command

destroyed 976 and damaged 1009 enemy aircraft in air-to-air combat. The FEAF lost 1041 aircraft of which 147 were from air-to-air combat and 816 were from AAA fire. ["The Statistical Summary of U.S. Air Force Combat Operations in Korea 26 June 1950 to 27 July 1953," in USAF Statistical Digest for 1954 AFR-5-24 (Washington, D.C.: U.S. Air Force, 1964), p. 15]. During the 1958 crises there were 25 air-to-air engagements from August 23 to October 6, 1958. Nationalist pilots destroyed 32 aircraft, downed probably three more and damaged ten. Nationalist forces lost four of their own aircraft. Air Operations in the Taiwan Crises of 1958 (Washington, D.C.: USAF Historical Division, November 1962), p. 39.

36. DZK, pp. 49-50, 53, 69 and 88.

37. DZK, p. 57.

38. DZK, pp. 266-271.

39. DZK, pp. 251-256. Even during the 1980s, photographic stories in China Pictorial and PLAAF pictorial books often showed PLAAF pilots watching an instructor demonstrate an aircraft maneuver with a hand-held model airplane. This technique was indicative of the emphasis on ground training.

40. DZK, pp. 480-491; Kongjun Shi, pp. 195-202.

41. DZK, pp. 271, 299 and 510-514. In 1984 the serious aircraft accident rate was 0.204. Between 1950 and 1953 the rate was 4.716, but dropped to an average of 1.5 until 1959 when it finally fell below 1.0. The PLAAF's three categories of aircraft accidents are: (1) aircraft and pilot lost; (2) aircraft lost, pilot safe; and (3) aircraft damaged, pilot safe.

42. Zhongguo Renmin Jiefangjun Kongjun Dier Hangkong Xuexiao Jianshi [Brief History of the PLAAF Second Aviation School] (Chengdu: Air Force Second Aviation School, August 1982), p. 7.

43. DZK, pp. 298-300 and 524.

44. DZK, pp. 299-300.

45. Dangdai Zhongguode Hangkong Gongye [China Today: Aviation Industry], by "China Today: Aviation Industry" editorial department (Beijing: China Social Science Press, 1988), p. 83. Hereafter DZHG.

46. Ibid., pp. 83-84.

47. For example, in Dangdai Zhongguo Kongjun the PLAAF historical chronology has no entries for 1972. The period from September 1971 to May 1973 is the only time the PLAAF did not have a commander. See Nien Cheng, Life and Death in Shanghai (London: Grafton Books, 1986); Liang Heng and Judith Shapiro, Son of the Revolution (New York: Vintage

Books, 1983); and David Milton and Nancy Dall Milton, The Wind Will Not Subside. Years in Revolutionary China--1964-1969 (New York: Pantheon Books, 1976).

48. The PLAAF Second Aviation School, for example, sent 1,669 of its staff to 11 provinces and 68 work units to carry out "three-supports and two-militaries" activities. The school slowly brought back staff members even though there had been considerable atrophy of skills and knowledge. In 1964 the total authorized strength of the school was 1,745 while in 1971 it had risen to 4,778. It appears that almost the entire school staff was dispersed early in the Cultural Revolution. Brief History of the PLAAF Second Aviation School 1949-1981, pp. 15 and 42.

49. Following his dismissal in 1966, Deng returned in 1973 as a vice-premier and Party vice-chairman. He also became the PLA chief of the general staff in January 1975, only to be dismissed from all these offices in April 1976. When he was rehabilitated for the second time at the Third Plenum of the Ninth Party Congress in July 1977, he retained his three previous positions, but also became a CMC vice-chairman. Yang Dezhi replaced Deng as chief of the general staff in 1980, and Deng became the CMC chairman in 1981

50. DZK, pp. 237 and 492.

51. DZHG, pp. 82-87.

52. The Military Commission of the Central Committee of the Chinese Communist Party (Zhongguo Gongchandang Zhongyang Junshi Weiyuanhui), which is sometimes cited as the zhongyang junwei or junwei, is commonly translated into English as the Central Military Commission (CMC). In the 1960s and 1970s it was routinely referred to as the Military Affairs Commission (MAC). The name of the commission in Chinese has not changed—only the English translations. Properly speaking, zhongyang refers to the Central Committee. It is understood in Chinese as an abbreviated noun rather than an adjective.

53. Ibid., p. 85. Even prior to the leadership of Wu Faxian, the PLAAF frequently had senior officers who served as deputy ministers of the aviation industry. The aviation industry clearly wanted full autonomy from the PLAAF.

54. DZK, pp. 670-675.

55. When the acronyms kongsi, kongzheng, konghou and konggong are used, they mean the Headquarters, Political, Logistics and Aeronautical Engineering Departments, respectively.

56. Regulations regarding retirement ages refer to AEP, not rank. Military pay is calculated on the basis of rank, AEP (grade) and time in service.

57. There is a set protocol order for all of the first level administrative departments and their second level subordinate elements from the highest to lowest levels in the chain of command. The three general departments are always in the order of General Staff

Department(zongcanmou bu/zongcan), General Political Department(zongzhengzhi bu/zongzheng), and General Logistics Department (zonghouqin bu/zongzheng). The order for the military region headquarters and the first three departments of the services (navy, air force, and second artillery/strategic rocket forces) is the Headquarters Department, Political Department, and Logistics Department. Due to service specific requirements, the navy has two additional first level departments, while the air force and second artillery each have one additional department. Even the seven MRAFs have a set order -- Shenyang, Beijing, Lanzhou, Nanjing, Guangzhou, Jinan, and Chengdu.

58. Major HqAF administrative reorganizations occurred in 1955, 1966, 1969 and 1976. There were eleven first-level departments in 1955 and 1966, three in 1969, and four in 1976. The changes between 1955 and 1966 reflected the 1957 merger of the air force and Air Defense Force and the 1958 addition of the SAM forces. In late-1957 there were 16 first-level departments. Every administrative organizational change at HqAF has been followed by similar changes at each lower level.

59. The four active Air Corps are the First (Changchun), Seventh (Nanning), Eighth (Fuzhou), and Tenth (Datong). The Second (Dandong) and Fifth (Hangzhou) Air Corps were abolished. The eight Command Posts are Dalian (former 3rd Air Corps), Tangshan (former 6th Air Corps), Xian (former 11th Air Corps), Wulumuqi (former 9th Air Corps), Shanghai (former 4th Air Corps), Wuhan (former Wuhan MRAF Hq), Kunming (former Kunming MRAF Command Post) and Lhasa. Although these organizations are primarily responsible for defending major cities, the 7th Air Corps became the PLAAF's "forward command post" during the 1979 Sino-Vietnamese border conflict. It was responsible for virtually all air force units in the operational area.

60. On October 5, 1987, a PLAAF SAM unit shot down a Vietnamese Mig-21 which entered Chinese air space. Given the wartime conditions and the nature of the air space penetration, the local commander was authorized to make the decision to shoot down the intruder. In routine matters, information is transmitted through a semi-automatic command and control system that links "operations centers" at each higher echelon.

61. Interview. Several PLAAF officers made this point during discussions with the authors. The term "interview" as used in this study includes official, unclassified briefings, conversations during meetings and discussions. For obvious reasons we do not identify individuals, specific dates or occasions.

62. DZK, pp. 489 and 491.

63. China Daily (Beijing), August 16, 1989, in FBIS-CHI-89-160, August 21, 1989, p. 39.

64. "The Military Budget System in the PRC," China Tech (Hong Kong) 1:2 (June 10, 1985), pp. 1-2. Another Hong Kong publication identifies the following PLA budgetary divisions: development (30%), maintenance (33%) and living expenses (36%). Additionally, the same source claims the military budget is comprised of two broad parts: "the overall

national defense budget and the combat readiness budget." In peacetime the latter is only about 10% of the total military budget. See Wan Li-hsing, "China's Military Expenditure to Increase Drastically in 1990," Tang Tai (Hong Kong) 18 (March 31, 1990), pp. 17-18, in FBIS-CHI-90-078, April 23, 1990, pp. 46-49.

65. The PLAAF has not stated how many enterprises are run by budui's. In 1989, however, it reported that more than 100 PLAAF enterprises earned profits in excess of RMB \$50,000 while several earned more than RMB \$1 million. (Jiefangjun Bao, October 1, 1989, p. 1.) Like other military services, the PLAAF has held conferences to enforce strict management of military enterprises. Presumably, the managers of these activities are no less creative than their civilian counterparts in devising accounting methods to retain more money for the use of the enterprise or parent budui.

66. Dou Dezhong, "The Chinese Air Force," Tallahassee Air Force Association, Tallahassee, FL, May 31, 1990. The figure of 470,000 PLAAF personnel is given in International Institute for Strategic Studies, The Military Balance: 1989-1990 (Oxford: Nuffield Press, 1989), p. 149. The average PLA ratio of officers to conscripts and volunteers is 3.3 to 1 compared to 2.45 to 1 before the 1985 reduction in forces. Wen Wei Po (Hong Kong), April 29, 1987, p. 3, and May 3, 1987, p. 7. Based on the figures supplied by Senior Colonel Dou Dezhong, the PLAAF air attache at the Chinese embassy in Washington, D.C., the PLAAF still has not reached the average PLA ratio. Dou's figure includes, however, "civilian officers." If they are excluded, the PLAAF probably comes close to the general PLA officer-conscript ratio. The PLA has published little segmented data regarding military manpower. Although there are specified numerical limitations on the number of general officers each service can have, the PLA has only referred to ratios for all other officer ranks. When ranks were assigned in 1988, the PLAAF had 126 general officers. See Zhongguo Kongjun, 6 (November 1988), p. 1.

67. In practice, organizations and commanders often work around their manning authorizations. It is not uncommon in Beijing for an officer working in one organization to be on the manning roster of another unit.

68. See Wu Jingting, Zhanzheng Dongyuan [War Mobilization] (Beijing: PLA Press, 1986).

69. The separate requirements of local jurisdictions underscore the friction that may exist between military units and neighboring communities. This kind of local discrimination prompts military units to establish enterprises to provide employment for dependents and military-supported schools to educate dependents.

70. For example, there is only one PLAAF medical training facility, but there are numerous transportation training units. DZK, p. 504.

71. Jun Xun Shouce [Military Training Handbook], by Editorial Group of the Changsha Military Engineering Academy, Hunan Military District (Changsha: Hunan Education Press, May 1988), p. 107; and FBIS, October 26, 1984, p. K14.

72. Interview.

73. PLAAF histories do not consistently treat the airborne forces as a sixth branch of the air force.

74. In terms of air transport, one Chinese analyst described the problem as follows: "Due to historical reasons China's military transport departments have not managed military air transport for a fairly long time." Changing this practice involved "a new task" as well as departing from "the previous practice of just concentrating on railway and water transport." The issue of air transport was first addressed in a report to the director of the PLA's General Logistics Department in early 1985. Regulations were not put into effect until March 1989. Prior to that time "the military used civil transport plans to carry out its air transport tasks. It lacked unified rules and regulations and was characterized by considerable arbitrariness in such areas as working out transport plans and time limits." Despite these changes, the analyst made no reference to a specific doctrine for tactical or strategic airlift. Hong Baocai, "The Development of China's Military Air Transport," Liaowang Overseas (Hong Kong), 30 (July 24, 1989), pp. 6-7, in FBIS-CHI-89-151, August 8, 1989, pp. 41-43.

75. Interviews.

76. Naval Aviation was not created until early 1950. FBIS Daily Report, March 3, 1986, p. K20.

77. Personnel in the PLAAF routinely refer to anti-aircraft artillery as yi pao (first artillery) and surface-to-air missile (SAM) units are referred to as er pao (second artillery). The PLAAF's SAM school is still informally referred to as the Er Pao Xuexiao which has led to some confusion with the Second Artillery's own Er Pao Xueyuan. In September 1958, the Special Weapons School (Tezhong Wuqi Xuexiao) was organized in Baoding. It was called the 15th Aviation School. This school was responsible for training personnel from all services to do maintenance work on surface-to-surface, surface-to-air and shore-to-ship missiles. In 1963, this school became primarily responsible for training only SAM maintenance and construction personnel and commanders.

78. "China Sets Up Army Air Arm to Increase Modernized Combat Effectiveness," Hsin Wan Pao (Hong Kong), April 18, 1989, p. 4, in FBIS-CHI-89-079, April 26, 1989, p. 40.

79. Turf battles, of course, are not a unique phenomenon within the PLA or PLAAF. Normally, these disagreements are not publicly aired. A recent but still opaque question of turf involved the transfer of PLAAF tactical airlift helicopters to the ground force's army aviation corps (Qijun hangkong bing or luhang) in the late 1980s. It is unclear whether the PLAAF wanted to retain the tactical airlift mission--which involved the small but modern fleet of Sikorsky Blackhawk helicopters--or give it away. It is equally unclear whether PLA ground forces commanders felt they could do a better job satisfying tactical airlift requirement than the PLAAF or the army ground forces were forced to accept the mission.

80. Liu Dajun and Wang Zumin, eds., Zhongguo Shehuizhuyi Guofang Jingjixue [Chinese Socialist Defense Economics] (Beijing: PLA Press, 1987), p. 126; Wang Baocun and Dong Haiyan, "Maikenamala Junshi Gaigede Gongguo Deshi" [The Successes and Failures of the McNamara Military Reforms] in Yang Dezhi, Huan Xiang, et. al., Guofang Fazhan Zhanlue Sikao [Thought on Strategies of Defense Development] (Beijing: PLA Press, 1987), pp. 239-251; Wang Shouyun, "Xinshiqide Guofang Keji he Wuqi Zhuangbei Fazhan Zhanlue Yanjiu" [A Strategic Study of the Development of Defense S&T, Weapons and Equipment in the New Period] in Zong Canmoubu Junxunbu, ed., Guofang Xiandaihua Fazhan Zhanlue Yanjiu [A Study of Development Strategy for Defense Modernization] (Beijing: Military Translation Press, 1987), p. 233.

81. The 25% reduction in force figure is routinely cited. There is perhaps an assumption among Chinese and foreign analysts that the reduction was applied across the board in all services. According to Dangdai Zhongguo Kongjun, the CMC authorized only a 20% reduction for the PLAAF on August 5, 1985. DZK, p. 675.

82. In reviewing the manuscript, Paul Godwin pointed out that the linkage between the doctrines of imminent war and extended peace is not particularly clear. He notes, for example, that debates about the imminent war doctrine continued from 1973 until the Third Plenum in December 1978. The doctrine of extended peace did not become dominant until 1985.

83. Technical officers and non-technical officers wear the same ranks, but they wear different collar insignia.

84. In the main, the retirement costs of volunteers and NCOs are handled by the local governments in the areas where they retire. Officer or cadre retirement procedures are more complex. Some officers, depending on whether they entered military service prior to (lìxiù status) or after October 1, 1949 (tuíxiù status), are transferred to civilian units that may assume some of the retirement costs. A new office with HqAF is the Retired Cadre Bureau (lào gānbù jù). In turn, it has two offices. The first is the Retired Division (lìxiù chú) and is responsible for cadres who joined the military prior to October 1, 1949. These cadres receive 100 percent of their active duty salary. They also are entitled to live in a retired cadre sanitorium (gànxiùsuo). The second is the Retired Division (tuíxiù chú) which is responsible for cadres who joined the military after October 1, 1949. They receive 80-90 percent of their active duty salary. They are not entitled to live in a sanitorium. This division helps find housing and possibly other employment. There are separate sanitoriums for each of the first level departments at HqAF. The MRAF Political Department's Cadre/Personnel Division (gānbù chū) is responsible for all sanitoriums at the MRAF Hq level. One PLAAF commander commented that in his region as much as 20 percent of his budget was used to support retired air force personnel. Retired officers may be entitled to retain the quarters they occupied at retirement for an indefinite period of time. There may also be provisions for the spouses and families of deceased retired military officers to continue receiving housing benefits. These practices are consistent with those that exist in large government ministries.

See Gu Ling and Li Ling, eds., Tuiwu Junren Zhishi Shouce [Handbook for Retired Military Personnel] (Beijing: PLA Press, 1986).

85. The PLA reorganized its ground fighting forces in 1985 from an infantry-heavy field army (yezhanjun) structure to corps size units called "group armies" (jituanjun). Generally, group armies combine several infantry divisions with armor divisions or brigades, as well as artillery, engineering, anti-aircraft, communications and other specialty forces into an integrated, combined arms fighting force. Although the first references to a group army were not seen until 1983 (supplied by Paul Godwin), the 1979 Sino-Vietnam border conflict provided the impetus for development of the concept which was finalized in 1982.

86. Chinese sources have not clarified how regional PLAAF assets are assigned to specific group armies. From the standpoint of joint operations in the West, it appears that the Chinese employment of supporting air power has focused on tactical applications. Their published analysis has not yet indicated how they propose to control the employment of air power at the theater or campaign level (i.e., the military region). At the theater level the pressing question is not how air force units interact with specific ground divisions, but how theater commanders broker competing demands for limited air assets.

87. The 8th and 9th Flying Schools were abolished, and the 11th Flying School was changed to the Test Flight and Training Center. The Surface-to-Air Missile, Weather, Political, Radar, and Communications Engineering academies, as well as the Engineering and Air Force Command colleges, have begun awarding masters degrees.

88. DZK, pp. 503-504. Initial pilot training now lasts for four years as an undergraduate and is divided into two distinct parts. The first part (20 months) is held at one of two basic flying schools. The second part, which consists of three phases (28 months), is conducted at one of the ten flying academies. Graduates receive a degree in military science and are commissioned second lieutenants. They are also given the AEP of a deputy company commander (fulianji). Actual flight training (155 hours) begins at a flying academy where students train in the CJ-6. They get an additional 130 hours in the F-5.

89. Training at the "transition training bases" (gaizhuang xunlian jidi) lasts for one year (100-120 flying hours). The pilots begin flying the F-5 for basic airmanship, then transition to the F-6 or F-7. Upon graduation, the pilots are expected to be capable of flying in "three weather conditions" (i.e., day and night visual flight rules/VFR, and day instrument flight rules/IFR). Thereafter annual flying hours vary according to the type of aircraft: bombers (80 hours), fighters (100-110 hours) and the A-5 ground attack aircraft (150 hours). DZK, pp. 503-504.

90. Graduation from a military school or academy with a college degree is not that common in the world. In many advanced, western countries military academy graduates and pilots still do not enjoy the same educational status as graduates of civilian colleges or universities.

91. The four aeronautical grades are 3rd, 2nd, 1st, and special grade in ascending order of excellence. The grades are assigned to pilots, navigators, communications personnel, gunnery

personnel, and instructor pilots. The criteria for acquiring these grades include time on station, flying hours, special missions, and ability to "fly in four weather conditions" (i.e., day and night visual flight regulations/VFR, and day and night instrument flight regulations/IFR). DZK, p. 507.

92. Ibid. The PLAAF established age limits for its pilots in the 1980s: fighter and ground attack-pilots (43-45 years); bomber pilots (48-50 years); transport pilots (55 years); helicopter pilots (47-50 years); and female pilots (48 years). The average age of fighter and ground attack pilots is 28 years.

93. Zhongguo Renmin Jiefangjun Zhengzhi Gongzuo Fence [Chinese People's Liberation Army Political Work Volume] in Vol. 8 of Zhongguo Dabaike Quanshu - Junshi [Great Chinese Encyclopedia - Military] (Beijing: Military Science Press, 1987), pp. 46-49, 53-55; Haijun Beihai Jiandui Hangkongbingbu Zhengzhibu, ed., Jundui Jiceng Zhenggong Shiyong Shouce [Practical Handbook of Military Grassroots Political Work] (Beijing: Navy Press, 1987), pp. 1-34.

94. Ibid.

95. Interview. The maternal part of the metaphor has been used to describe the General Staff Department's Foreign Affairs Bureau (FAB) which Chinese officers describe as "our mother-in-law. It is a little different."

96. Most of this criticism appeared in attacks against the so-called "peaceful evolution" efforts of Western states to subvert the nature of China's political and social system. See Rui Bian, "The Strategic Goals of the West in Promoting 'Peaceful Evolution,'" Banyuetan [Semimonthly Talks] 19 (October 10, 1989), pp. 56-59, in FBIS, JPRS Report: China, JPRS-CAR-89-112, November 22, 1989, pp. 1-3; Liu Guohua, "At an All-Army Political Work Meeting Yang Baibing Explains 'Several Questions on Strengthening and Improving Army Political Work in the New Situation,'" Jiefangjun Bao, December 19, 1989, p. 1, in FBIS-CHI-90-018S, January 26, 1990, pp. 32-34; and Qiu Jichen, "Protect the Army's Purity As We Do Our Eyes," Jiefangjun Bao, March 30, 1990, pp. 11-13. The peaceful evolution theme came into its own after June 1989. There were obscure references to it at least as early as July 1988 when Chinese writers claimed to detect peaceful but subversive western initiatives in Eastern Europe. See FBIS, JPRS Report: China, JPRS-039-88, July 22, 1988, p. 5.

97. The tone of this paragraph should not be construed to mean that the political commissar system is accepted uncritically. The consistent unwillingness of officers to talk about the system in any detail underscores the existence of a host of sensitivities. There appears to be a dichotomy of attitudes among some officers. Officers, who are always party members, are generally comfortable with party control. Concurrently, some officers (read party members) are not always comfortable with the commissar system as a component of routine military affairs. Their reasons are unclear, but in many instances they may not have much to do with basic party principles or policies.

98. When this practice was explained to Western air force officers, PLAAF officials were routinely vague about how command jurisdictions are resolved when the distinction between a military and political issue is unclear. A synthesis of various explanations is that through years of experience, line and political officers have acquired an unwritten understanding or tolerance of the recurrent differences. Understanding the distinctions has become part of the air force's culture and a necessary staff skill. Additionally, commissars and commanders frequently work together at different organizational levels where they may develop personalized working relationships. (Five of the seven MRAF political commissars [1990] had previous HqAF or MRAF command staff positions. The Shenyang and Beijing MRAF commanders and political commissars worked together for several years.) Disagreements or conflicts are normally viewed as more personality than jurisdiction dependent. The rationality of the explanation collapses when political struggles within the party lead to a politicalization of even the most routine operational matters--as frequently happened during the Cultural Revolution.

99. Bueschel, p. 53. PLAAF and Ministry of Aviation Industry histories confirm the expectations, but underscore how seriously modernization was undermined in 1968 and 1969.

100. The renaming of the Air Force Museum (Kongjun Bowuguan) at Shahezhen Airfield near the Great Wall in 1988 illustrates some of the underlying tension between the civilian aviation industry and the PLAAF. The museum was long referred to in PLAAF circles as the Air Force Museum. By 1988 the PLAAF was prepared to open the museum to the general public. When Premier Li Peng visited the museum that year, he is reported to have commented, "It is a fine aviation museum." According to PLAAF sources, Ministry of Aviation Industry (MAI) personnel immediately used Li Peng's statement as official approval of MAI participation. To the consternation of some PLAAF personnel, the name of the museum was subsequently changed to the Aviation Museum (Hangkong Bowuguan).

101. China began copying the Soviet SA-2 SAM in 1959 and called it the Hongqi-1 (HQ-1/CSA-1). The PLAAF received its first missiles in 1965. The Hongqi-2 (HQ-2/CSA-2), which is a modified HQ-1, entered the inventory in 1966. Although a mobile SAM, the Hongqi-61 (HQ-61), has been under development for several years. Problems have apparently plagued the system.

102. Once they were modified, the MIG-19, MIG-21, TU-16 and MI-4 became the F-6 (Jian-6/J-6), F-7 (Jian-7/J-7), B-6 (Hong-6/H-6) and Zhi-5 (Z-5).

103. The Nanchang A-5 (Qiang-5/Q-5) was derived from the MIG-19. It was originally called the Xiongying 302. Western writers initially called it the Shenyang F-9 or F-6bis. In response to PLAAF requirements, the Chengdu Aircraft Company (CAC) developed a delta-wing interceptor known as the F-9 during the 1960s. The project was canceled in 1969--as were many projects at that time--in favor of the F-8 under development at the Shenyang Aircraft Company (SAC). Also in response to PLAAF requirements, the Nanchang Aircraft Manufacturing Company (NAMC) developed the F-12 light interceptor in the 1960s and conducted the first test flight in December 1970. Although several prototypes were produced,

this project was also canceled. A model of the F-9 is in the museum of the Beijing Institute of Aeronautics and Astronautics (referred to as Beihang) while an F-12 is displayed at the Shahezhen Aviation Museum north of Beijing.

104. DZK, p. 545.

105. Hangkong Weixiu 9 (September 1988). The entire issue deals with the problem of hydraulic system malfunctions.

106. According to various articles in Hangkong Shibao, from 1986 to 1989 the F-8II incorporated 157 new or modified pieces of F-8 equipment which amounted to about one-third of all the F-8's equipment. Some of these modifications include the WP-13 engine, the FDSX-02 and FDSX-03 electronic anti-skid brake system, the KJ-12 autopilot, the use of titanium alloy in 64 load bearing areas, and a new radome. During the development process, 94 primary experiments were performed.

107. Donald E. Fink and Paul Proctor, "Shenyang Focuses on Commercial Projects As Military Aircraft Requirements Shrink," Aviation Week and Space Technology, December 11, 1989, p. 70. From 1985 to May 1990, the Chinese F-8II development project actually consisted of two programs. One program was the integration of an American fire control system acquired through the "Peace Pearl" program. The second program involved the installation of a Chinese fire control system. Peace Pearl was a \$502 million project funded solely by the PLAAF through a United States foreign military sales (FMS) program. The PRC-US program originally called for modernizing 50 basic F-8II aircraft with a modified Westinghouse AN/APG 66 radar and fire control computer, a Litton LN-39 inertial navigation system and a head-up display.

108. Jim Mann, "China Cancels U.S. Deal for Modernizing F-8 Jet," Los Angeles Times, May 15, 1990, p. 1.

109. Zhu Yaping, photo caption in Zhongguo Hangkong Hangtian Bao, June 7, 1990; Jiefangjun Bao, November 15, 1990, p. 1.

110. Although the Chinese aviation industry has produced for export the F-7M and A-5M with western avionics, the PLAAF has not been interested in purchasing large numbers of these aircraft. One major reason is that the Ministry of Aero-Space Industry (MAS) requires the air force to pay hard currency for the foreign equipment on the aircraft. This requirement substantially increases the unit cost of each aircraft. The PLAAF receive renminbi procurement funds from the GSD, but the foreign currency costs must be made up by the air force. The PLAAF naturally wants to pay for the entire aircraft in renminbi which would mean a net loss for MAS factories.

111. Richard G. O'Lone, "Chinese Air Force Developing Few New Aircraft Designs," Aviation Week and Space Technology, December 7, 1987, pp. 55-56; and Richard G. O'Lone,

"China Modernizes Military Aircraft in Atmosphere of Fiscal Austerity," Aviation Week and Space Technology, December 11, 1989, pp. 55-59.

112. The design, development and testing of new aircraft involves a lengthy process. Chinese aviation historians claim that it was the Cultural Revolution that extended some development cycles well beyond ten years. During the Cultural Revolution, demands were placed on aviation engineers to develop aircraft in two or three years. If China is now developing new fighter aircraft, the factories and institutes will still have to go through several time-intensive phases. The design phase will take at least four to five years. The test flight phase will take another four to five years depending on the design.. Once aircraft development reaches finalization, the training of pilots and maintenance personnel may take six to twelve months. Depending on the type of aircraft, it could take another six to twelve months to produce enough (10-15) aircraft to equip the initial receiving squadron. According to Jiefangjun Bao, it took one PLAAF unit three years to become operational after the initial fighters began to arrive. Of the four factories that currently produce combat aircraft (Shenyang/F-8, Chengdu/F-7, Nanchang/A-5 and Xi'an/B-6 and B-7/FB-7), the only real design competition exists between Shenyang and Chengdu. Besides the F-8II, the only new combat aircraft undergoing flight testing is the B-7/FB-7 (Hong-7/Qianhong-7) ground attack aircraft at Xi'an. Comparing the time it has taken to complete development of past aircraft--including the F-8 and F-8II--it appears that the B-7/FB-7 will not be ready for deployment until at least the late-1990s--and even then in small numbers. If other aircraft are being designed, past experience suggests it will be well into the 2000s before they are ready for deployment. Jiefangjun Bao, October 7, 1988, p. 1.

113. Tai Ming Cheung, "Comrades in Arms: China Signals Willingness to Resume Soviet Ties," Far Eastern Economic Review, July 19, 1990, p. 30; and February 14, 1991, pp. 8-9.

114. "Fuelling Speculation," Far Eastern Economic Review, February 21, 1991, p. 9.

115. The current HqAF deputy commanders who are Korean War veterans are Lin Hu, Li Yongtai and Liu Zhitian. The MRAF commanders are Liu Yudi (Beijing), Sun Jinghua (Lanzhou) and Hou Shujun (Chengdu). The MRAF deputy commanders are Yao Xian (Beijing) and Han Decai (Nanjing).

116. There are still several cases in which deputy unit commanders outrank their commanders because they have more time in service. It will therefore take several years before the oldest officers reach retirement age and the rank structure becomes fully rational.

117. Zhang Shuyun, "Enhance Awareness of the Quality of Military Training," Jiefangjun Bao (Beijing), December 14, 1990, p. 4, in FBIS-CHI-91-003, January 4, 1991, p. 38.

118. We do not contend the PLAAF has been totally depoliticized. All militaries have a political dimension. We believe the evidence supports the view that the PLAAF--and other PLA services--have become much less involved in parochial party politics.

APPENDIX G
AVIATION TERMINOLOGY
CHINESE TO ENGLISH

<u>CHINESE</u>	<u>STANDARD TELEGRAPHIC CODE</u>
<u>ENGLISH</u>	
Anquan	1344/0356
Safety	
Ba'er gongcheng	0360/0059/1562/4453
F-8-2 Engineering Program	
Bangongshi	6586/0361/1358
General Office	
Bangongting	6586/0361/1689
General Office (GSD, GPD, MND, CCP Military Commission)	
Baoji	0545/2623
Cargo Aircraft	
Baowei bu	0202/5898/6752
Security Department	
Beikong	0554/4500
Beijing MRAF	
Bianyi	4882/6230
Edit and Translate	
Bu	6752
Department	
Budui	6752/7130
Unit/Troops	
Caiwu	6299/0523
Finance	
Canmou	0639/6206
Staff Officer	
Canmouzhang	0639/6206/7022
Chief of Staff	
Changbu	0208/6752
Repair Shops	
Chang zhan	1034/4541
Field Station (Supply)	
Cheliang	6508/6538
Vehicles	
Chengkong	2052/4500
Chengdu MRAF	

Chengyuan	2052/0765
Member	
Chu	5710
Division (Administrative Element Under a Department)	
Chuanzhen	0278/4176
Facsimile	
Dadui	1129/7130
Group (Operational Unit)	
Daibiaotuan	0108/5903/0957
Delegation	
Da junqu	1129/6511/0575
Military Region	
Danwei	0830/0143
Unit (administrative element)	
Dangwei	8093/1201
Party Committee	
Dangwei changwei	8093/1201/1603/1201
Party Standing Committee	
Daodan	1418/1734
Missile	
Daohang (daohang xitong)	1418/5300/4762/4827
Inertial Navigation System	
Daxiao	1129/2699
Senior Colonel (O-7)	
Daxiu	1129/0208
Depot Level Maintenance	
Daxue benke	1129/1331/2609/4430
Undergraduate Degree	
Dianchuan	7193/0278
Teleprinter	
Dianzi	7193/1311
Avionics	
Dianzi duikang	7193/1311/1417/2123
Electronic Countermeasures	
Dikong daodan	0966/4500/1418/1734
Surface-to-Air Missile	
Dikong daodan bing (budui)	0966/4500/1418/1734/0365 (6752/7130)
Surface-to-Air Missile Troops	
Dinghuo	1353/6303
Procurement	
Dingqi jiancha (dingjian)	1353/2601/2914/2686 (1353/2914)
Periodic Inspection	
Dongyuan	0520/0765
Mobilization	

Duikong qingbao bing	1417/4500/1906/1032/0365
Aircraft Reporting Troops	
Duile	7130/0441
Formation	
Duli	3747/4539
Independent	
Erji feixingyuan	0059/4787/7378/5887/0765
Second Grade Pilot	
Erdengji xiuli	0059/4583/4787/0208/3810
Intermediate Level Maintenance	
Erpao	0059/3517
PLAAF Surface-to-Air Missile; PLA Second Artillery (Strategic Rocket Forces)	
Fadongji	4099/0520/2623
Engine	
Fangan	2455/2714
Program (Phase)	
Fangkong	7089/4500
Air Defense	
Fangkongjun	7089/4500/6511
Air Defense Force	
Fangmian jun	2455/7240/6511
Front Army	
Fanyi dui	5064/6230/7130
Translation Unit	
Feiji	7378/2623
Aircraft	
Feixing guanzhishi	7378/5887/4619/0455/1358
Air Traffic Control Office	
Fendui	0433/7130
Flight	
Fu	0479
Deputy (Prefix)	
Fujian*	7096/0115
Accessories	
Ganbu	1626/6752
Cadre, officer	
Ganbu xiuyangsuo (ganxiusuo)	1626/6752/0128/7402/2076 (1626/0128/2076)
Retired Cadre sanitorium	
Ganbu bu	1626/6752/6752
Cadre/Personnel Department	
Gaopao	7559/3517
Antiaircraft Artillery	
Gaoshepao bing (budui)	7559/1410/3517/0365 (6752/7130)
Antiaircraft Artillery Troops	

Gongchang guanli bu (gongguan bu)	1562/0617/4619/3810/6752 (1562/0617/6752)
Factory Management Department	
Gongcheng shejiju	1562/4453/6080/6060/1444
Engineering Design Bureau	
Gongcheng Yanzhi	1562/4453/4282/0455
Engineering Development	
Gongying	0180/2019
Supply	
Gu	5140
Branch (Administrative Element)	
Guangkong	1639/4500
Guangzhou MRAF	
Guanli	4619/3810
Administrative	
Guofang kexue jishu gongye weiyuanhui (kegongwei)	
0948/7089/4430/1331/2111/2611/1562/2814/1201/0765/2585 (4430/1562/1201)	
Commission on Science, Technology and Industry for National Defense	
(COSTIND/formerly known as NDSTIC)	
Guofangbu	0948/7089/6752
Ministry of National Defense (MND)	
Haijun hangkong bing (haihang)	3189/6511/5300/4500/0365 (3189 5300)
Naval Aviation	
Hangkong cailiao (hangcai)	5300/4500/2624/2436 (5300/2624)
Air Material	
Hangkong gongcheng bu	5300/4500/1562/4453/6752
Aeronautical Engineering Department	
Hangkong gongye bu (hangkong bu) (AKA sanji bu)	
5300/4500/1562/2814/6752 (0005/2623/6752)	
Ministry of Aviation Industry (MAI) (AKA 3rd Ministry of Machine Building)	
Hangkong hangtian gongye bu	5300/4500/5300/1131/1562/2814/6752
Ministry of Aero-Space Industry (MAS)	
Hangkong zhishi	5300/4500/4249/6221
• Aerospace Knowledge (Monthly Magazine)	
Hangkong bing	5300/4500/0365
Aviation Troops/Unit	
Hangtian bu	5300/1131/6752
Ministry of Astronautics (MCA)	
Hangxing	5300/5887
Air Traffic Control	
Hecheng jundui	0678/2052/6511/7130
Combined Arms	
Hong-wu/liu/qi (hong-5/6/7)	6575/0063/0362/0003
B-5/6/7 Bomber	

Hongzha hangkong bing	6575/3498/5300/4500/0365
Bomber Aviation Unit	
Hongzhaji	6575/3498/2623
Bomber	
Houqin	4920/0683
Logistics	
Huabei	5478/0554
North China	
Huadong	5478/2639
East China	
Huayu yuan	6114/0523/0765
Telephone Operator	
Huazhong	5478/0022
Central China	
Huncheng lu	3236/2052/2464
Combined Brigade	
Huoli kongzhi (huokong xitong)	3499/0500/2235/0455(3499/2235/4762/4827)
Fire Control (System)	
Jian-ba	3005/0360
F-8 (Written as Jian-8, Spoken as Qian-8)	
Jian-ba-er	3005/0360/0059
F-8-2 (Written as Jian-8-2, Jian-8-II, or J-8-II, Spoken as qian-ba-er)	
Jian-	3005
Fighter designator F- (Chinese write as a J- Prefix)	
Jianhong-qi	3005/6575/0003
Fighter/Bomber-7 (FB-7)(Written as jianhong-7, Spoken as qianhong-7)	
Jianji hangkong bing	3005/2345/5300/4500/0365
Fighter Aviation (Spoken as qianji hangkong bing)	
Jianjiao-	3005/2403
Trainer designator FT- (Spoken as qianjiao-, Chinese write as a J- prefix)	
Jianjiji	3005/2345/2623
Fighter (Spoken as qianjiji)	
Jiaxiaryuan	2665/4848/0765
Linesman	
Jiefangjun kongjun (kongjun)	6043/2397/6511/4500/6511
PLA Air Force (PLAAF)	
Jiefangjun bao	6043/2397/6511/1032
Liberation Army Daily	
Jiguan	2623/7070
Jiguan/lingdao jiguan means the headquarters and/or command staff	
Jihua	6060/0439
Plans	
Jiji fangyu	4480/2623/7089/1785
Active Defense	

Jiji zhiyuan		4480/2623/2388/2266
Active Support		
Jikong		3444/4500
Jinan MRAF		
Jingwei		6226/5898
Security		
Jiqin		2111/0530
Technical Support		
Jishu		2111/2611
Non-Aircraft Maintenance (SAM, AAA, Radar, Comm troops); technical		
Jituanjun		7162/0957/6511
Group Army		
Jiwu		2623/0523
Aircraft Maintenance		
Jixie (jijie)		2623/2750
Machinery (Written as jixie, Spoken as jixie or jijie)		
Jiyao		2623/6008
Confidential		
Jizhong shiyong		7162/0022/0169
Concentrated Use		
Ju		1444
Bureau		
Jubu zhikongquan		1444/6752/0455/4500/2938
Local Air Superiority		
Jun		6511
Army/Air Corps		
Junqu		6511/0575
Military Region (MR)		
Junqu kongjun		6511/0575/4500/6511
Military Region Air Force Hq (MRAF Hq)		
Junshi xueshi xuewei		6511/0057/1331/1102/1331/0143
Bachelor of Military Science		
Junwu		6511/0523
Military Affairs		
Junxiao bu		6511/2699/6752
Schools Department		
Junxie (junjie)		6511/2750
Armament (Written as junxie, Spoken as junxie or junjie)		
Junxu		6511/7194
Quartermaster		
Junxun bu		6511/6064/6752
Training Department		
Kaocha zu		5072/2686/4809
Site Survey Team		

Ke		4430
Office		
Keyan bu (keji yanjiu bu)	4430/4282/6752	
Scientific Research Department		
Kong gong (kongjun hangkong gongcheng bu)	4500/1562	
Hq Air Force, Aeronautical Engineering Department		
Kong Hou (kongjun houqin bu)	4500/0683	
Hq Air Force, Logistics Department		
Kongjiang bing	4500/7100/0365	
Airborne Troops		
Kongjun	4500/6511	
Hq Air Force; PLA Air Force		
Kongjun jun	4500/6511/6511	
Air Corps		
Kongjun zihui xueyuan	4500/6511/2172/2264/1331/7108	
PLAAF Command College		
Kongkong daodan	4500/4500/1418/1734	
Air-to-Air Missile		
Kong si (kongjun siling bu)	4500/0674	
Hq Air Force, Hq Department		
Kongzhan	4500/2069	
Aerial Combat		
Kong zheng (kongjun zhengzhi bu)	4500/2398	
Hq Air Force, Political Department		
Kongzhong jiaozhan	4500/0022/0074/2069	
Aerial Combat		
Lankong	5695/4500	
Lanzhou MRAF		
Lao ganbu	5071/1626/6752/6752	
Retired Cadre		
Leida	7191/6671	
Radar		
Leida pīng (budui)	7191/6671/0365 (6752/7130)	
Radar Troops		
Lian	6647	
Company		
Lianluo	5114/4820/6752	
Liaison		
Liaoyangyuan	4070/7402/7108	
Pilot's Sanitorium		
Linghuo jidong	7227/3172/2623/0520	
Flexibility Mobility		
Lu	2464	
Brigade		

Lujun hangkong bing (luhang)	7120/6511/5300/4500/0365 (7120/5300)
Army Aviation	
Lunzheng	6158/6086
Theoretical Evaluation	
Miaozhun	4178/0402
Aiming (System)	
Minhangju	3046/5300/1444
Civil Aviation Administration of China (CAAC)	
Mishu	4434/2579
Secretary	
Mixie xietong	1378/0434/0588/0681
Close Coordination	
Nankong	0589/4500
Nanjing MRAF	
Peixian	6792/4848
Line Maintenance	
Peixun	1014/6064
Training	
Qiang-wu (qiang-5)	1730/0063
A-5 Ground Attack Aircraft	
Qiangji hangkong bing	1730/2345/5300/4500/0365
Ground Attack Aviation Unit	
Qiangjiji	1730/2345/2623
Ground Attack Aircraft	
Qianzhi	0467/2172
Forward Command Post	
Qingbao	1906/1032
Intelligence	
Qixiang	3049/6272
Weather	
Qunzhong gongzuo (qungong)	5028/5883/1562/0155
Mass Works	
Quzhu	7517/6632
Pursuit	
Renmin zhanzheng	0086/3046/2069/3730
People's War	
Sanji feixingyuan	0005/4787/7378/5887/0765
Third Grade Pilot	
Shangjiang	0006/1412
General (3-Star/O-10)	
Shangwei	0006/1414
Captain	
Shangxiao	0006/2699
Colonel	

Shaojiang		1421/1412
Major General (1-Star/O-8)		
Shaowei		1421/1414
2nd Lieutenant		
Shaoxiao		1421/2699
Major		
Shebei		6080/0271
Equipment		
Sheji dingxing		6080/6060/1353/0992
Design Finalization		
Shengchan		3932/3934
Production		
Shengchan Dingxing		3932/3934/1353/0992
Production Finalization		
Sheng junfenqu		4164/6511/0433/0575
Military Sub-District		
Sheng junqu		4164/6511/0575
Provincial Military Command/Military District		
Shenji		1399/6060
Audit		
Shenkong		3088/4500
Shenyang MRAF		
Shi		1358
Air Division (Under an Air Corps/MRAF); Army division		
Shi		1597
Office		
Shifei		6107/7378
Test Flight		
Shifeiyuan		6107/7378/0765
Test Pilot		
Siling bu		0674/0109/6752
Headquarters Department; Headquarters		
Silingyuan		0674/0109/0765
Commander		
Suo		2076
Research Institute		
Tanzhao deng		2232/2109/3597
Search Light		
Teji feixingyuan		3676/4787/7378/5887/0765
Special Grade Pilot		
Teshe		3676/6080
Special Equipment		
Tiaoling		2742/0109
Regulations		

Tongshuai bu	4827/1596/6752
General Headquarters	
Tongxin	6639/0207
Communications	
Tongxin bing	6639/0207/0365
Communications Troops	
Tongxun	6639/6061
Communications	
Tongyi zhihui	4827/0001/2172/2264
Unified Command	
Tuan	0957
Regiment	
Waichang	1120/1034
Field Maintenance	
Waishi	1120/0057
Foreign Affairs	
Weihu	4850/6233
Maintenance	
Weiji	1792/2623
Microcomputer	
Weisheng	5898/3932
Health	
Weixiu	4850/0208
Repair	
Weiyuan	1201/0765
Commission Member	
Weiyuanhui	1201/0765/2585
Commission	
Wuxiandian	2477/4848/7193
Radio (Wireless)	
Xibei	6007/0554
Northwest	
Xiezong dongzuo jihua	0588/0681/0520/0155
Coordinate Action Plan	
Xinan	6007/0589
Southwest	
Xingzheng	5887/2398
Administrative Control	
Xitong	4762/4827
System	
Xiujian bu	0208/1696/6752
Construction Department	
Xiuli	0208/3810
Maintenance/repair	